Finance and Insurance: Converging or Diverging?

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May 2003

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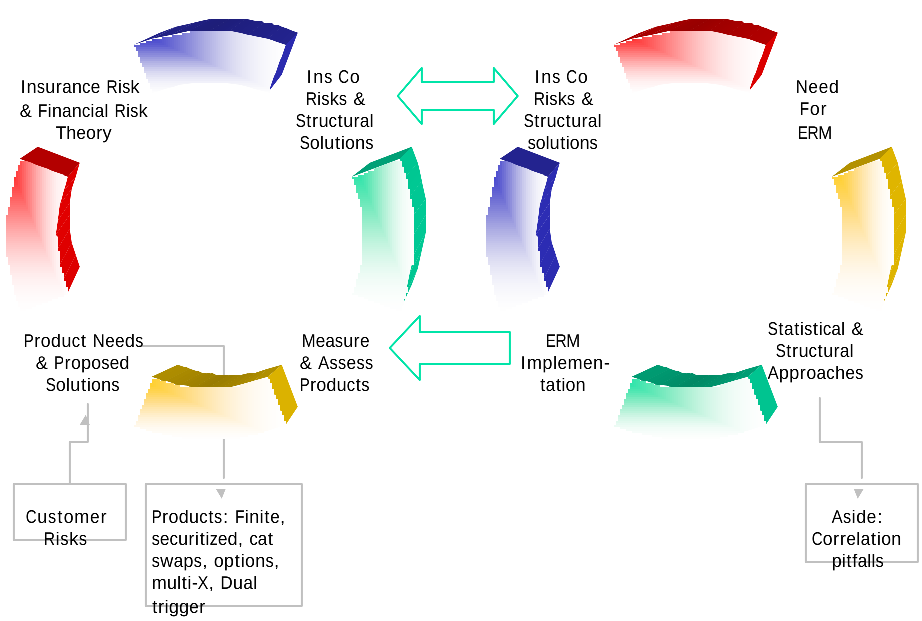
Risk Cycles



Overview

1. Property/Casualty Underwriting
2. State of the P/C Market 1997-2003
3. Finance and Insurance: Compared and Contrasted
4. Enterprise Risk Management: Tools and Techniques
5. Applications of Finance Theory to ERM and ART
6. Conclusions

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1. P/C Underwriting Intro

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What is Underwriting?

- Understand, assess and quantify risks
- Provide infrastructure to issue policies, comply with regulation, adjust claims
- Attract capital to support writings
  - Existence of capital demonstrates uw competence to buyer
- Distribution, relationship capital
- Infrastructure considerable barrier to entry and off-balance sheet asset

P/C Insurance Policies

- Auto liability (AL) and physical damage (APD): personal and commercial
- General liability (GL): Premises and Products
- Workers Compensation (WC): statutory cover, unlimited loss potential
- Homeowners
- Commercial property: Terrorism
- Umbrella (over AL, GL)
- Reinsurance

Pooling and Catastrophes

- Independence of risks underlies P/C insurance
- Catastrophe (Cat) Risk: catch-all phrase for failure of independence
  - Hurricane, earthquake
  - Tornado, winter storm
  - Terrorist attack
- Property cats monitored by PCS
  - Provide industry wide estimates of losses from cat events over $25M

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2. State of the Market 1997-2003

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State of Market

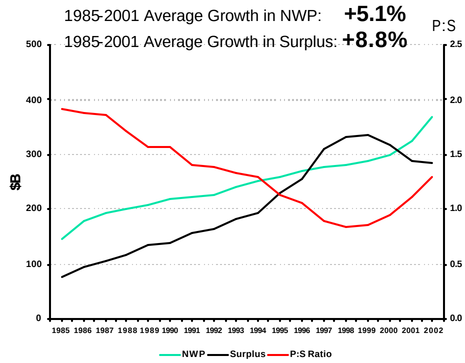
- Reform of insurance and banking laws
- Integration of banking and insurance
  - Banks partnering (P/C) and merging (Life) with insurers
  - Banks as P/C intermediaries rather than risk bearers
- Industry over- ***and*** under-capitalized
  - Low ROE, very low leverage ratios through 2000
    - Conservative rating agency models
    - One-time capital gains
  - But, inability to cope with large cats
  - Industry using capital inefficiently?

State of Market

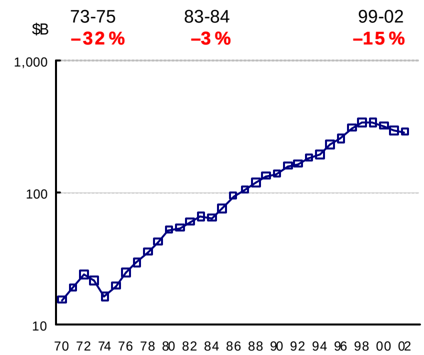
- Wind-fall capital gains in late 1990s led to savage price war and poor underwriting results 97-2000
- Through 2000, cosmetic book keeping kept results afloat
- Fragile industry shocked in 2001
  - 9/11 terrorist attacks
  - Enron, asbestos, mold
  - Historically low interest rates
  - Medical cost inflation

Surplus and Leverage (85-02)

NWP, Surplus, Leverage



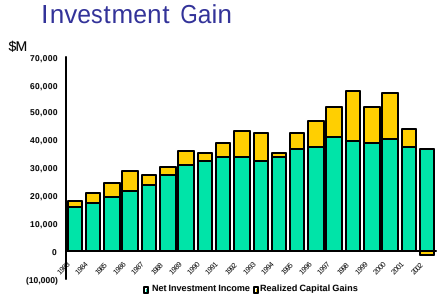
Statutory Surplus, 75-02



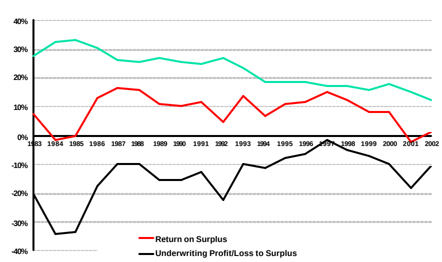
Source: Best's Aggregates & Averages; ISO

Investment Income

Investment Income and Realized Capital Gain Components of Total Investment Gain



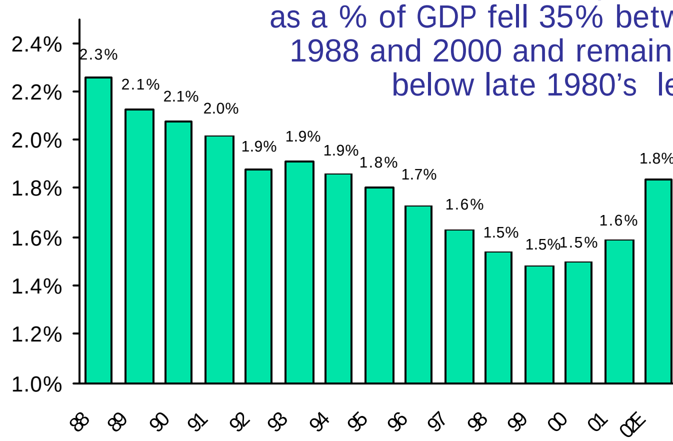
Secular Decline in Investment Income



Source: Best's Aggregates & Averages; ISO; NCCI

Economic Cost of Insurance

Commercial insurance premiums as a % of GDP fell 35% between 1988 and 2000 and remains far below late 1980's levels



Sources: Insurance Information Institute, calculated from U.S. Bureau of Economic Analysis and A.M. Best data.

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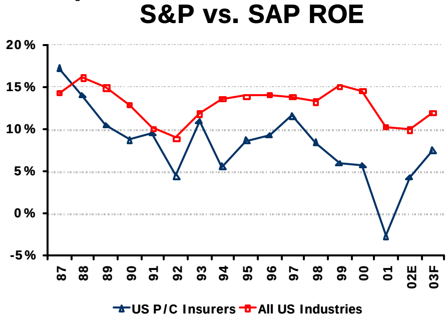
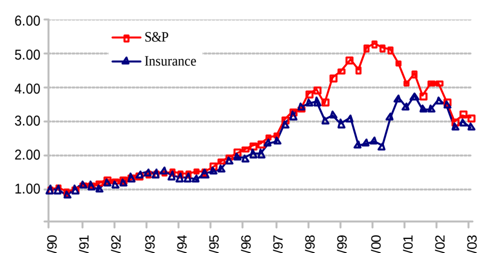
Industry Returns vs. S&P 500

S&P vs. SAP ROE



S&P vs. Bloomberg P/C Index



Poor returns inconsistent with investor appetite for insurance post-9/11

or

Market saw soft insurance market in mid-1998?

Source: Insurance Information Institute and *Fortune* (left); Bloomberg total return (right)

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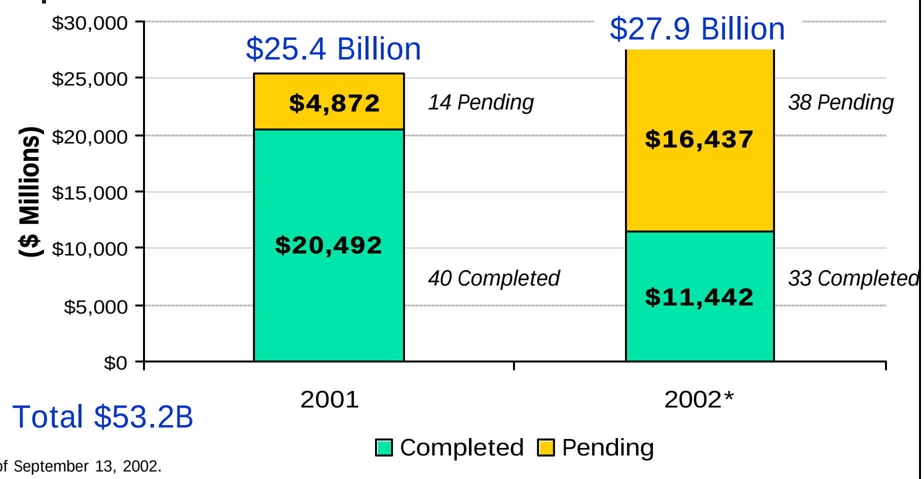
Capital Raising by Non-Life Insurers Worldwide Since Sept.11, 2001



As of September 13, 2002.

Source: Morgan Stanley, Insurance Information Institute.

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9/11: Capital Market Reaction

- Securitization advocates had great expectations
- Market disappointed
- Reaction swift and consistent

Group	Capital Raised	9/11 Loss	Net New Capital	Pct Total
Bermuda Startups	6.3B	0.0	6.3	58%
Existing Bermuda Cos.	3.5	1.8	1.7	16%
North American Cos.	2.3	1.1	1.2	11%
Lloyds/London	1.0	0.1	0.9	8%
Other	2.4	1.7	0.7	6%
Total	**15.5**	**4.7**	**10.8**	**100%**

All amounts in $B
Source: IBNR Weekly 1/6/2002

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9/11: Capital Market Reaction

- Investors utilizing Bermuda companies and start-ups, rather than existing US-based P/C companies
  - No A & E hang-over
  - No reserve development on prior years
  - Tax and accounting benefits
  - New shells a “clean play” for investors to “flip”
  - 75% of net capital went to Bermuda
- Securitized solution not suited to opportunistic writings and exercise of underwriting judgment
  - Even stock startups had some difficulty “putting capital to work”
  - Underwriting and technical talent greater constraint than capital

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Subsequent Market Reaction

- Several successful IPOs in last six months
  - Endurance Specialty Holdings (ENH)
  - Montpelier Re (MRH)
  - Platinum Underwriters Holdings (PTP) = old St. Paul
  - AXIS announces IPO for $517M, March 2003
- Bermuda insurers bucking trend in current unfavorable IPO environment
- Existing companies with deep pocket parents getting contributions
  - CNA
  - Zurich
  - American Re ($3B)
  - Fireman’s Fund
- Premier brands able to raise capital
  - Travelers
  - AIG
  - Chubb
  - Allianz, €4.4B closed 4/30

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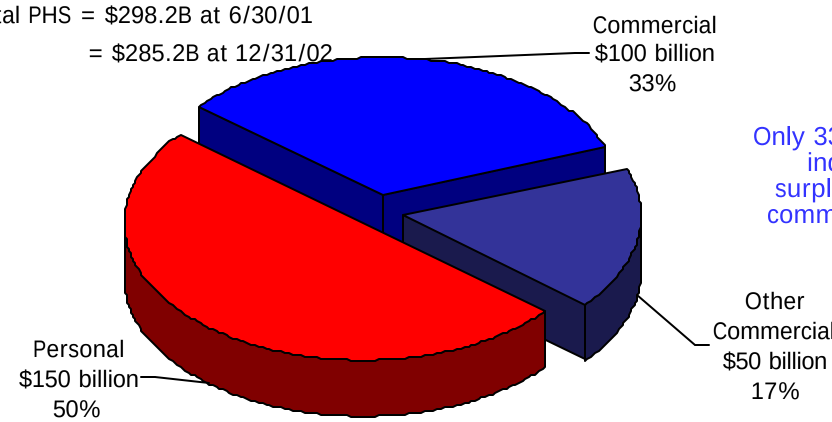
Breakdown of US P/C Capital

Total PHS = $298.2B at 6/30/01

= $285.2B at 12/31/02



Only 33% of industry surplus for commercial lines

Source: Insurance Information Institute

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Conclusions

- Insurance bosses "capital accumulators" rather than "capital allocators"[1]
- No industry consensus on required capital
  - Insurers "abdicate responsibility" for capital adequacy to rating agencies [2]
- Insurers should look at pricing and returns in financial services
  - Weill comments on Travelers!
- Securitization does not provide compelling solutions to any existing insurance problem
- Stock insurance company remains ideal way to securitize risk

[1] Capital Punishment, The Economist 1/14/1999
[2] P&C RAROC, Nakada, Shah et al., JRF Fall 1999

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3. Finance and Insurance Compared and Contrasted

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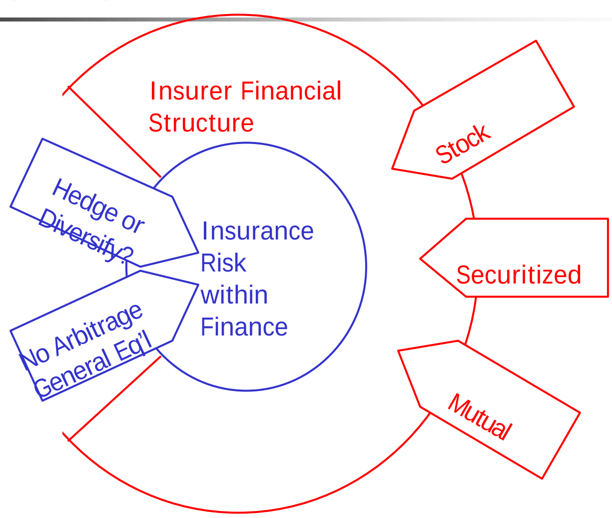
Overview



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M&Ms

- Imagine a market for M&Ms
  - Market sells individual M&Ms and packages of M&Ms
- Atom of risk: one M&M, one color
  - Market for atoms should be efficient
  - Prices determined by macro economic equilibrium
    - How many green M&Ms are there? What is the demand?
- Price of a package of M&M should be sum of prices of component atoms
  - Enforced by comparables, no-arbitrage
  - Assumes absence of transaction costs
- No-arbitrage has nothing to say about the price of individual M&M atoms
  - ...almost: no-arbitrage would ensure M&M atoms sold at consistent prices in different markets

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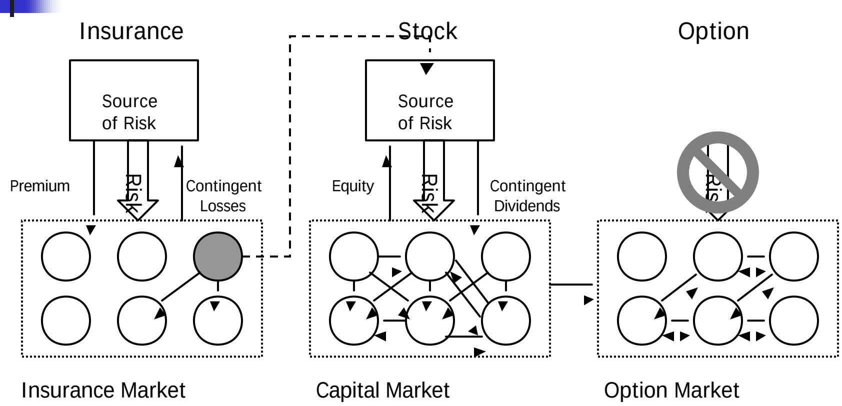
Finance and Insurance



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Key Concepts

Concept	Definition	M&Ms	Equity	Deriv-atives	Insur-ance
Supply and Demand		Determines price of single M&M	Determines price of single stock	Locally irrelevant; acts through hedging	Determines price of single policy
Efficient Markets	Prices fully reflect all information; impossible to profit by trading	Mainstay assumption about prices	Mainstay assumption about prices	Assumes price transp-arency	Mainstay assumption about prices
No Arbitrage or Law of One Price	Existence of arbitrages means prices not equilibrium if exists single rational agent. Comparables.	Says nothing about prices of one atom of risk relative to another		Consistency requirement on prices	Insurance policies all unique M&Ms
Comparables or Replication	Comparables must have same price by no arbitrage. Determines price of comparables!	Determines prices of packages	N/A – all stocks are different	Determines derivative prices as the hedging cost to set up a riskless hedge portfolio; price enforced by no arbitrage	N/A – all policies are different
Hedging, risk-neutral valuation	Mechanistic, self-financing trading strategy realizing comparables and reducing risk		Statistical vs. probabilistic hedging		

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More Key Concepts

Paradigm	Capital Markets	Insurance Markets
Risk and Return	Systematic risk	Price non-systematic risk
Diversification	CAPM, APT, CIR, Partial & General Equilibrium Models	Risk Bearing through pooling
Hedging	Options pricing, Comparables, No-arbitrage	Traditionally impossible, Reinsurance!
Comparables, Replication	Long/short positions, liquid, transparent markets, standardization	Insurable interest, unique products

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Comparison of Risk Bearing

Trade to Manage ← → Diversify to Manage

Hedge
Black-Scholes idealization
Adjust probabilities

Real world financial option

Dual-trigger financial/ insurance instrument

Diversify
Stock
Bond
Insurance
Cat Bond

No arbitrage
Comparables determine unique price

Efficient Market
Need general theory to determine unique price

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Insurance Valuation

When it comes to the valuation of Insurance liabilities, the driving intuition behind the two most common valuations approaches – arbitrage and comparables – fails us. This is because, for the vast majority of insurance liabilities, there are neither liquid markets where prices can be disciplined by the forces of arbitrage and continuous trading, nor are there close comparables in the market.

We are left in a predicament, but not an impasse. If we can refocus our attention from “market value” to “present value,” progress can be made. In doing so we need not descend the slippery slopes that surround the quagmire of equity valuation. The pseudo-scientific methods typically used there impart only a thin veneer of respectability.

David F. Babbel
Discussion of “Two Paradigms for the Market Value of Liabilities”
by Robert Reitano
NAAJ 1(4), 1997

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Complete Markets and Insurance

- **Complete Market**: every pattern of cash flows can be replicated by some portfolio of traded securities
  - Every security is a package of M&Ms; price the M&Ms individually
- Insurance products are not redundant
  - They add to the set of available securities
  - They are each a uniquely colored M&M
- A redundant insurance contract would be redundant!
  - Insurance risk is residual, unhedgable risk
  - Insureds would hedge themselves and only insure residual risk
  - Insurance creates uncorrelated assets for investor/insured
- No arbitrage pricing techniques do not determine the price of non-redundant securities
  - Need supply and demand; general equilibrium theory

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Complete Markets and Insurance

- Redundant securities can be replicated as a package of other securities
  - Can be hard to determine replicating package
  - Black-Scholes solved packing problem for stock options
- No-arbitrage assumption forces price of a package to equal the sum of the prices of the components
- If replicating package is unique then price uniquely determined
  - Black-Scholes packaging is unique
- Replicating "Pricing Factory" can make the price of redundant securities independent of supply and demand
- Contrast to Actuarial Pricing
  - No consensus on risk and profit loads
  - Numerous risk-load approaches used in industry
  - Searching for general equilibrium theory
- Actuarial pricing is equivalent to stock pricing, not option pricing

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Market Pricing for Cat Bonds

- Bond with interest or principle at risk from catastrophic events
- Cat Bond pricing problem interesting:
  - Relationship to corporate bond pricing and to insurance pricing
  - (In-)Consistency with financial theories
- Issue of skewness in asset returns
  - Greed: Positive skewness is perceived as good
  - Fear: Negative skewness is perceived as bad
- Insurance returns are negatively skewed
  - You do well, you do OK
  - You do badly, you do really badly
- Most asset returns are symmetric or positively skewed
- Mainstream finance would suggest either CAPM or adjusted probability approach
- Naïve application of theories difficult, see Section 5

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Summary

- Insurance shares concepts and structures with finance
  - Swaps and Options ←→ Excess of Loss Insurance
- Actuarial/insurance pricing
  - Like stock pricing, not derivative pricing
  - No consensus on risk and profit loads
  - Searching for general equilibrium theory
  - Applying risk-Adjusted interest rates
    - Related to CAPM / APT arguments
    - Correlations with existing book of business
    - Wang and adjusted probabilities
  - Numerous risk-load approaches used in industry
  - Insurers (must) price non-systematic risk
    - Costly for insurers to raise capital
    - Benefit to non-insurers from laying off risk

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4. Enterprise Risk Management

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4.1 ERM Background

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Risk Management

- Consistent earnings often stated management goal
- Is goal consistent with financial theory?
  - CAPM ignores non-systematic risk
  - Lower cost of capital? Internal capital?
  - Tax
- Earnings management
  - Demonstrate actual earnings more effectively
  - Match one-time expense and gains
  - Misleading investors on source or level of income
  - Hide true risk?
- Does requirement to “book to best estimate” increase insurance industry cost of capital?

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Insurer Financial Structure

- Risk management philosophy reflected in financial structure

Asset Risk	Liability Risk	Off-B/S Risk	Agency Risk
▪ Credit	▪ Catastrophes	▪ Franchise Value	▪ Liquid surplus
▪ Interest rate	▪ Inflation	▪ Hidden Assets	▪ Pricing discipline
▪ Investment	▪ Legal	▪ Hidden liabilities	
▪ Market	▪ Reinsurance	▪ Event Risk	
	▪ Reserve	▪ Regulatory	

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Insurer Financial Structure

Owners, policyholders, and managers have different goals and objectives

Managers
- Increases probability of insolvency - costly to managers
- Decreases free cash
- Proportionately increases any fixed management ownership

Owners

Leverage?

Policyholders
- Owners have call on residual value
- Risky investments more valuable to owners

Lloyds

Mutual

Optimal capital structure a trade-off between benefits of increased leverage to minimize owner-manager conflict, and decreased leverage to minimize owner-policyholder conflict

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Insurer Financial Structure

Stock

Where is Securitized solution?

Mutual

Stock
- Hard-to-quantify risk
- Uw discretion vital
- Potentially difficult for owners to track and control uw actions
- Sophisticated and knowledgeable policyholders

Helps minimize owner-manager conflicts

Stock Insurance Companies

Owners and manager interests more effectively aligned

Mutual
- Easy-to-quantify risk
- Little/no need for uw discretion
- Easy for owners to track and control uw actions
- Important because mechanisms available for owners to control managers more limited

Solves owner-policyholder conflicts

Mutual Insurance Companies

Merge owners and policyholders
Good for less sophisticated pol'holders

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Insurer Financial Structure

- Mutual companies more common in personal lines, WC
- Stock companies more common in commercial and specialty lines
- Where does securitized solution fit?
  - "UW and done" approach divorces uw decision from results
  - Does not appear to solve owner-manager conflict or owner-policyholder conflict
- Cat bonds involve very little or no underwriting judgment
  - Minimize potential owner-manager conflict
  - Similar to mutual fund structure
  - Short-tailed claim settlement (until Northridge)

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4.2 ERM

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ERM

- What is ERM?
- Why is ERM important?
- Who should ERM?
- How should ERM be done?

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What is ERM?

ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purposes of increasing the organization’s short- and long-term value to its stakeholders

Overview of ERM, CAS ERM Committee May 2003

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What is ERM?

Two dimensional process

Risk Management Process Steps

Identify Quantify Prioritize Transform Monitor

ERM

Layoff
Manage
Reduce
Hedge

Types of risk

- Hazard
  - Traditional Insurance
- Financial
  - Interest rate, FX, Credit
- Operational
  - Controls, HR, logistics, IT
- Strategic
  - Reputation, competition, technology, innovation

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ERM: Non-Insurers

- What are the large events that could impact the company?
  - "Keep you up at night" events
  - Large exposures often first party rather than third party
    - Damage to property
    - Rogue trading
- ERM framework essential for understanding and managing risk
  - You cannot manage what you cannot measure
- Risk to shareholders is from entire enterprise
  - Investors certainly indifferent to arbitrary compartmentalization of risk
- Banks have used extensively and effectively

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Why is ERM Important?

- Consistent earnings is one stated goal of ERM
- Consistent earnings: good or bad?
  - Until Enron, Global Crossing, consistent earnings were considered good: GE, AIG
- Advantages of consistent earnings
  - Consistent earnings results in virtuous circle of higher credit rating, lower cost to borrow, larger scale (GE Capital)
- Disadvantages
  - Hides true risk in business, lowering required return
  - Confuses and misleads investors and analysts

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Earnings Management

- Is goal consistent with financial theory?
  - CAPM ignores non-systematic risk
  - Myers-Skinner (1998) shows companies on earnings “winning streak” have incentive to continue streak
    - Higher valuation multiples
    - Bigger drop when growth falters
  - Do not comment on why valuations high
- Types of earnings management
  - Demonstrate actual earnings more effectively
  - Match one-time expense and gains
  - Misleading investors on source or level of income

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Why Non-Insurers ERM

- Operational flexibility
  - Pricing
  - Relative competitive advantage
  - Focus on core-competencies
- Lower cost of capital
  - Credit enhancement
  - Greater leverage
- Internal capital budgeting and project planning
- Higher stock market valuation multiples
  - Deliver consistent earnings
- Protect franchise value
  - Capitalize on market opportunities
- Tax benefits
- Bonus protection and job security
  - Would you work for an uninsured entity?

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Why Insurers ERM

- Costs of financial distress
  - Rating essential
    - Higher price for more secure product
    - Cost of credit
  - Capital: expensive to replace
    - Asymmetric information in new equity issues
    - Insurer reluctance to release proprietary information
    - Easy to change risk portfolio
    - High costs and taxation discourage dividends
    - Regulation
- Costs of volatility of results
  - Concave tax schedules
  - Hard for analysts to track true performance
  - Prevents company from investing in profitable business opportunities
  - Capital: an expensive way to manage risk
    - Double taxation of investment earnings
    - Lower ROE
    - Perils of corporate bloat, owner-manager agency problem

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Who should ERM?

- ERM most common amongst financial companies
  - Banks have used successfully
- Insurer ERM *similar* to non-insurer ERM
- ERM clearly essential to insurer:
  - Maintaining strong balance sheet mission-critical
  - Volatile portfolios
- Insurer-reinsurer relations good laboratory for studying enterprise-insurer relations

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Who is the CRO?

- Treasury / CFO
  - Manage financial risks
  - May have more corporate-wide view
- Risk Manager
  - Manages traditional insurance coverages
  - Less comfortable with financial risks

Risk Manager
Treasury
HR
Operating Departments
Legal

Turf-war mentality and inter-departmental nature of problem seen as major stumbling block for ERM. Cited as major obstacle in Honeywell/AIG integrated deal. Accounting regulations now require unbundling of embedded derivatives

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4.3 How should ERM be done?

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Core ERM Problem

ERM is the process of estimating the **probability distribution** of **macro financial variables** whose **future** values depend on **many inter-related** underlying variables

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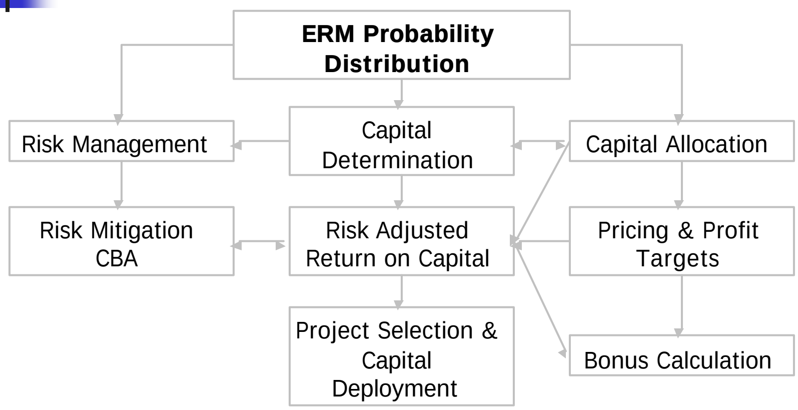
ERM Goals and Objectives



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ERM Decisions

- Short-term or long-term horizon?
- Tactical or strategic?
- Statistical or structural?
  - Business process modeling or direct financial variable modeling?
  - Correlations derived or enforced?
- Analytic or simulation?
- Focused or failure?

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ERM Successes in Banking

- Short, defined timeframe
- Focused question
  - Quantify carried position risk
- Tactical application
  - Act immediately to reduce unwanted risk
- Statistical basis
- Clear objective measure in overnight value-at-risk (VaR)

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ERM in Insurance

- Long duration, illiquid liabilities
- Long term, strategic questions
- Panning: three issues compared to banks:
  1. Estimation Risk
  2. Adaptive Behavior Problem
  3. Franchise Value Problem
- Very different problem to banking
- Yet other differences for other industries
  - E.g. Airlines

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ERM Tools

- Structural Models
- Statistical Models

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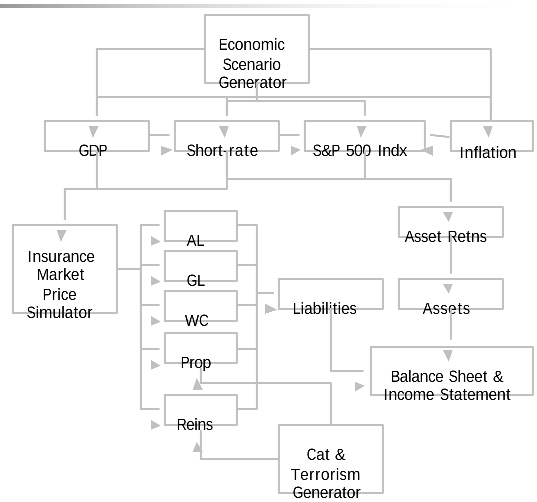
ERM Tools: Structural Models

- Model business process drivers and interactions directly
- Correlations by-product of model
- Big, complex models
- What actuaries call *Dynamic Financial Analysis*
  - Not altogether successful!



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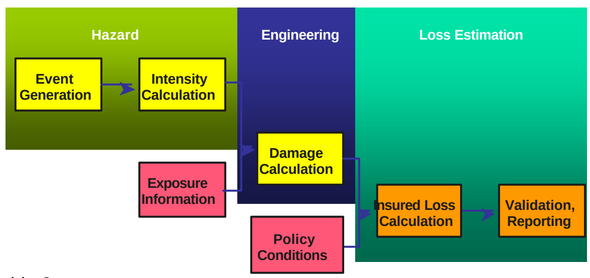
Structural: Catastrophe Models

- Event, site damage, site properties, site policy, site financial loss
- Insurer portfolio results computed site-by-site, event-by-event
- Insurer overall results computed by aggregating by event
- Cat models have revolutionized property reinsurance
  - Brought greater stability and discipline to market
- Success for process based modeling



Graphic: AIR Worldwide Corp.

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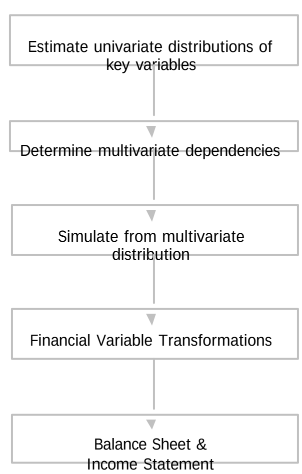
ERM Tools: Statistical Models

- Models based on direct observations of key variables
  - Model effects directly, not through causes
- Ensure model reflects observed correlations and dependencies in data
- Computationally more direct and focused
- Determining parameters difficult



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Statistical Models: VaR

- Banks use use multivariate distribution of fundamental asset prices, combined with security-by-security valuation to compute overnight VaR
- Specific problem; specific tactical solution
- Banks can act on result of model to control, change, minimize, hedge or transform unacceptable risk aggregations
- Securities markets provide amazing data; reasonably well behaved underlying distributions

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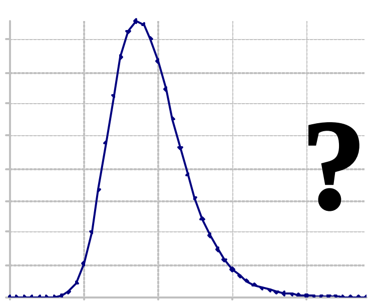
Risk Measures

- What is risk?
  - How to collapse a distribution to a point



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- Standard Deviation
- Right-tail risk
- Expected excess cost
- Probability of impairment
- Kurtosis

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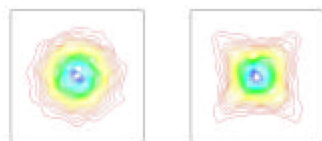
ERM Pitfalls – Technical Aside

- Two marginal distributions and correlation do not determine aggregate distribution
- Uncorrelated is not independent
  - Z and Z^2, $Z \sim N(0,1)$ are uncorrelated but not independent

Left box uses a normal copula, right box a t-copula. Same marginal distributions. Marginals are uncorrelated.



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Multivariate Samples

- Iman-Conover method invaluable
- Correlation=tendency for high and low values to cluster
- Iman-Conover method shuffles marginal distributions so rank correlation equal to reference multivariate distribution with desired correlation structure
- Fast, efficient, easy to implement
- Basis for @Risk and other Excel add-ins
- Can produce 10,000 x 250 line samples on P/C in 4 seconds

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ERM Vendors

- Banking
  - Sungard Panorama
- Insurance
  - Oliver Wyman, Marsh Risk
  - ERisk
  - Insurance and Reinsurance Brokers
  - Consultants
  - Investment Bankers

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5. Applications of Finance Theory to ERM and ART

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What have we learned?

- No arbitrage and law of one price say the price of a package is the sum of the prices of the pieces
  - No 3-for-the-price-of-2 in insurance
  - Multi-line insurance costs savings
    - Lower expenses,
    - Less coverage, or
    - Same Price!
  - Multiline aggregate excess beneficial to insured
    - ERM tools could help insurers assess and price
    - Estimating variability in portfolios very difficult
      - Kemper aggregate standard deviation estimated at 6 and 16 by reputable modelers!

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What have we learned?

- Investors will not pay others to do what they can do for free
  - Insured will hedge themselves before purchasing insurance on residual risks
  - Accounting rules require embedded options be accounted for separately
  - Double trigger covers and integrated risks can be created by insureds
- ERM helps insureds determine natural hedges in their risk profiles
  - CNA/CEA example

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What have we learned?

- Insurance swaps potential natural risk diversification method
  - Challenge to ensure equitable underwriting
  - Zero/low cost when no events
  - State Farm / Tokio Marine & Fire (2001)
    - $200M Limit
    - Earthquake exposure: Japanese and US New Madrid quake
    - Coverage triggered by magnitude of event, not loss
    - State Farm receives
      - 17.5% of limit for 6.6R quake
      - 100% of limit for 7.1R+ quake
    - Diversifies risk and reduces net exposure
    - No premium outgo

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What have we learned?

- Finite insurance products
  - Can provide useful capacity and income smoothing for difficult-to-quantify risks
  - Banking type solution
  - Within insurance largely driven by accounting rules
  - Examples
    - Transportation product revenue guarantee
    - Credit enhancement

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What have we learned?

- Agency problem central for insurers
- Securitized solutions do not provide agency-risk management advantages over existing structures
  - Introduces new problems, legally complex
  - Market dormant post-9/11
  - Long incubation period or failed solution?

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Diversifiable Risk

- Why can insurers charge for diversifiable risk?
  - Franchise value; frictional costs model (Smith)
  - Demographic model
    - Insurance shifts risks amongst households
    - Cannot diversify away from concentrations of households and wealth
      - Extended CAPM
    - Defines “large” risk in insurance, relative to 100M households:
      - $1M loss is $0.01/hh, $1B is $10/hh, $100B is $1000/hh
      - Indicates large s/b $1-5B

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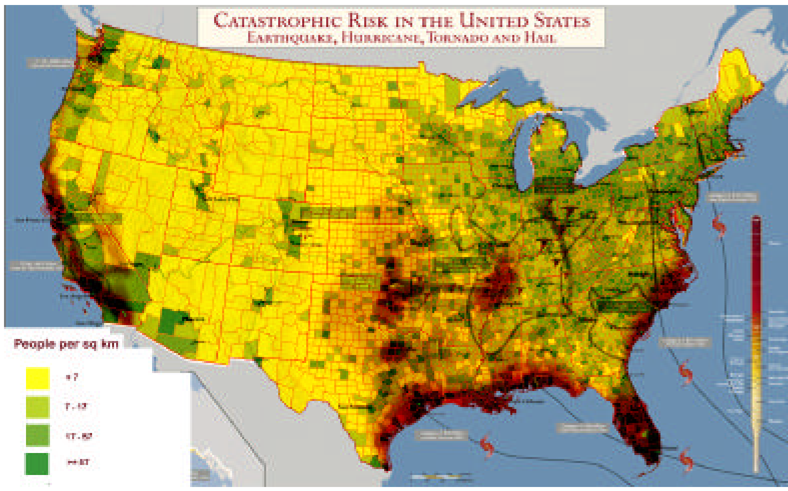
Population and Catastrophes



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Closing Mystery

- **Why do insurers write policies more cheaply than banks offer letters of credit?**
  - LOC costs 25-75 basis points per year
  - Basis point = 1/100th of 1% or \$100 per \$1M
  - Minimum facultative reinsurance costs \$75/1M, or less than 1 basis point
    - World Trade Center top layers, "sleep at night" coverage
  - Personal Umbrella written at similar rates
  - LOC: payback, restricted reporting period
  - Why?

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6. Conclusions

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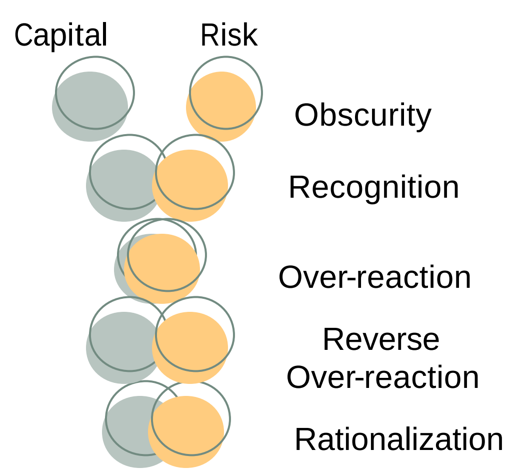
Conclusions

- **Philbrick OR^3 model**
- Citibank-Travelers
  USAA Cat Bond
- Predicted convergence,
  Securitization ends
  insurance cycle
- Citibank-Travelers split
  ERC-GE split
- Cat Bonds



Graphic: Philbrick, Bowles 2003

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Conclusions

- ERM and capital management essential to insurers future
- Dual-trigger, embedded options products at odds with financial theory and accounting
- Cat Bonds, Cat Swaps should have future
- Aggregate excess of loss reinsurance truly beneficial to insureds but requires insurer liability-ERM to be more accurate than current state of the art

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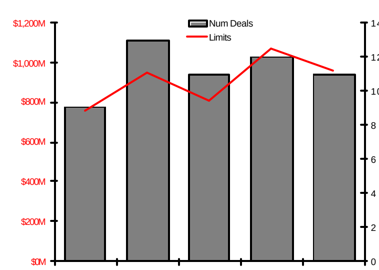
Conclusions

- Securitization not taking off
  - Great opportunity post-9/11
  - Investments almost entirely in (new) stock insurance companies
  - Securitization does not address agency problem
- Convergence with financial institutions – stepping backwards?
  - Travelers and Citigroup
  - GE and ERC – sell-off rumors



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References and Links

- Links and references are available on my web site, along with a copy of this presentation:

http://www.mynl.com/pptp/bolnick2003.pdf

- Please email any comments on this presentation to me at steve@mynl.com

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