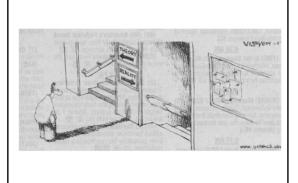
## TOWN HALL SESSION

Underwriting Profit and Contingency
Risk Loading in Ratemaking
Section RR-1

A Brief History of Actuarial Pricing



## A Short History of Actuarial Pricing

- 1. Budget period Supply side provision of +5% (+2.5 for WC)
- 2. Investment offset -Calendar year acct (ISO ,Biger-Kahane)
- 3. CAPM return: Returns offset w income at risk-free (Fairley, Hill)
- 4. Include taxes, (Myers-Cohn), 2 tax rates (Hill-Modigliani)
- 5. Perspective: Policyholder, Shareholder (NCCI, Cummins, Taylor)
- 6. PV taxes independent of risk, (Myers, Derrig)
- 7. Insurance is an option (Krauss-Ross, Doherty-Garven, Derrig)
- 8. Insolvency put in prices (Butsic, Cummins-Allen-Phillips)
- 9. Allocate capital (costs):
- Insolvency put equal at the margin (Myers-Read);
- Capital and risk management, catastrophes, (Zanjani);
  - Testing prices for frictional costs, (Cummins-Phillips-Lin)

## A Short History of Pricing - Comments • 1. Budget period – Supply side provision of +5% (Company) 2. Investment Offset- Calendar year pricing (Company) 2. CAPM return: Returns offset w risk-free income (Equilibrium) • 3. Include taxes, Myers-Cohn (Policyholder) • 4. Perspective: Policyholder, Shareholder (Equilibrium) • 5. PV taxes independent of risk, (Myers Theorem) 6. Insurance is an option (Price is exchange option value) 7. Insolvency put in prices (Price is less than fully guaranteed price) . 8. Allocate capital (Costs): Insolvency put equal at the margin (Equilibrium); Capital and risk management, catastrophes, (Frictional costs); Testing prices for frictional costs (Taxes, RM, Capital) Questions for the White Board 1. Which Risk Metric Should be Used: Total Return to Capital or Claim Volatility? Agree that every dollar of surplus stands behind each and every risk, so allocation is not possible? 3. What's the Role of a Competitive Market: Profit in the Indicated vs. Filed Rates? 4. Is there a cost of capital for every line of business in rate filings? 5. Does the Quality of Risk Management Affect Price: Better Management mean Higher Prices? 6. How does the financial crisis affect our profit formulations, if at all. REFERENCES Automobile Insurers Bureau of Massachuseits. 2008 Advisory Filing for Under 1% Companies, Biger, Nahum and Yehuda Kahane 1978. Risk Considerations in Insurance Ratemaking, Journal of Risk and Insurance, 45-1, 124-132. Butsic, R.P., 1999. Capital Allocation for Property-Liability Insurers: A Catastrophe Reinsurance Application, Casually Actuarial Society Forum, Spring, 1-70. Cummns, D., Derrig R. and R. Phillips, 2007. A Report on the CAS COTOR Risk Premium Project, Risk Management Newsletter. Cummins, D., Harrington, S., 1987. Fixe ale of Return in Property-Liability Insurance. Cummins, D., Harrington, S., 1987. Fixe ale of Return in Property-Liability Insurance, 1987. Advisor of Property-Liability Capital For Property-Liability Insurance, 1987. Advisor of Risk and Insurance, 12, 3, 441-478. tossures, Journal of Rock and Insurance, \$\frac{1}{2}\$, \$\frac{1}{

## **REFERENCES**

- Fairley, W., 1979. Investment income and profit margins in property-liability insurance: theory and empirical results. *Bell Journal of Economics*, 10, 195/210.

  Froot, Kenneth A., 2007. Risk Management, Capital Budgeting and Capital Structure Policy for Insurers and Reinsurers, our Re