The Economics of ***Stock vs. Mutual (takaful) Insurance in the U.S.A.***

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Prologue

- Prof. Siddiqi:
  - ethical and efficiency considerations are in harmony more often than not
- Dr. Malaikah: (questions for this talk)
  - What is the driving force behind recent demutualizations? Lack of capital vs. "irrational exuberance"
  - Hybrid mutual/stock: best of both worlds or worst of both worlds?

Empirical background

c.f. Mayers and Smith (1988), Born, Gentry, Viscusi and Zeckhauser (1998)

- *We concentrate on property and casualty*
  - *Other religious factors affect life insurance.*
- "Stocks" and "Mutuals" co-exist in most lines of property and casualty insurance.
- They are equally likely to concentrate their activities in a few lines of business.
- Mutuals are more important in certain lines, and were not losing market share through early 1990s:

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Percentage of industry business

source: *Born, Gentry, Viscusi and Zeckhauser (1998)*

(using NAIC data)

Line of business	1984 stocks	1984 mutuals	1991 stocks	1991 mutuals
Home owners multi peril	**43**	**54**	**38 ↓**	**59 ↑**
Commercial multi peril	**75**	**19**	**71 ↓**	**19 ≈**
General liability	**87**	**11**	**52 ↓**	**6 ↓**
Medical malpractice	**58**	**17**	**40 ↓**	**17 ≈**
Auto private bodily injury	**58**	**33**	**56 ↓**	**35 ↑**
Auto comm. bodily injury	**79**	**18**	**79 ≈**	**18 ≈**
Auto private physical damage	**56**	**35**	**53 ↓**	**38 ↑**
Auto comm. physical damage	**78**	**19**	**77 ↓**	**20 ↑**

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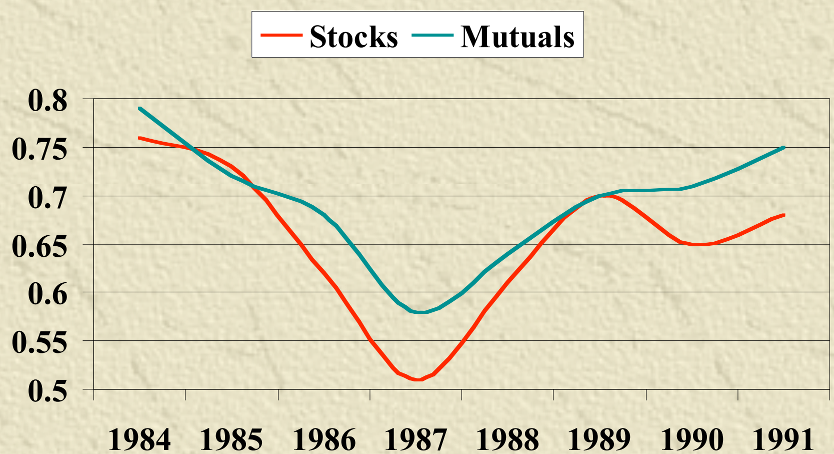
General patterns

- **Mutuals' share in property/casualty insurance:**
  - grew from 10% in the 1920s to 30+% in the 1960s and has remained stable ever since.
- **There is no clear size-pattern when comparing mutuals with stocks.**
- **There is no clear profitability-pattern when comparing mutuals with stocks:**

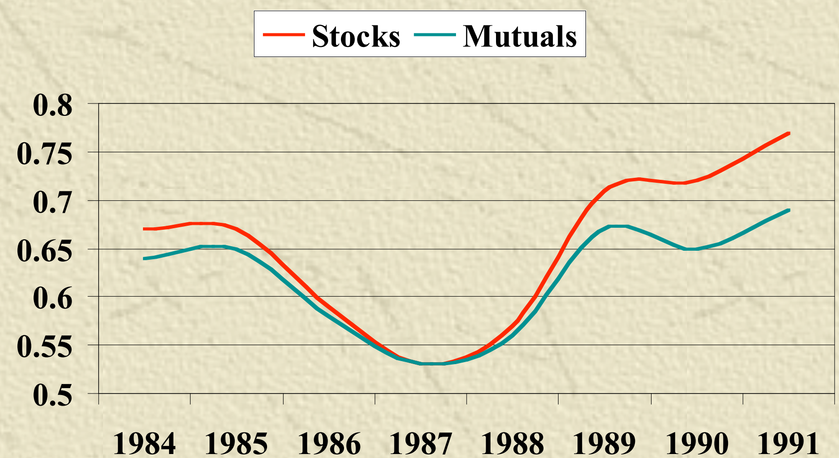
Stocks and mutuals loss ratios

source: *Born, Gentry, Viscusi and Zeckhauser (1998)*

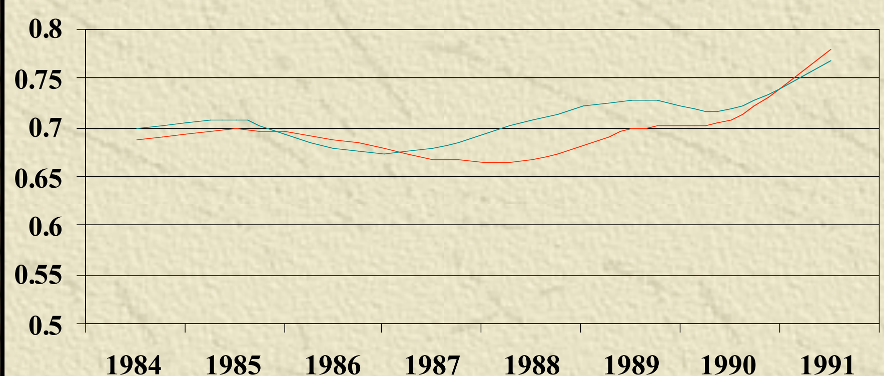
Homeowners multiple peril



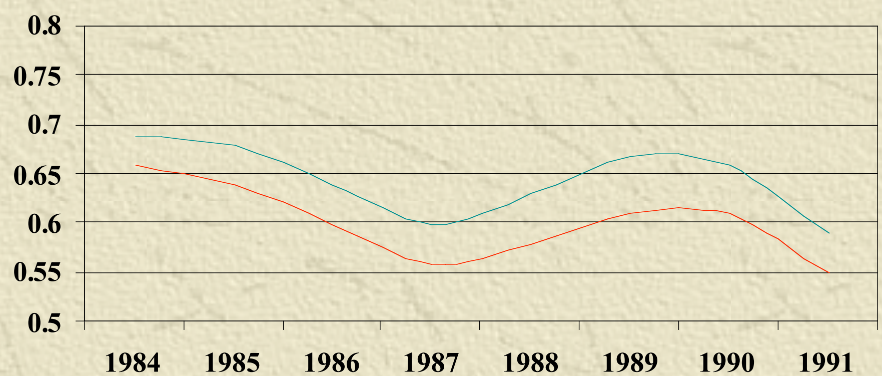
Commercial multiple peril



Automobile private bodily injury



Automobile private physical damage



Detected empirical differences

- Stocks collect more premiums nation-wide, but mutuals write more contracts per-line per-state
  - ***Born, Gentry, Viscusi and Zeckhauser (1998)***
- For given amount of premiums, stocks have higher losses than mutuals.
  - ***Lamm-Tennant and Starks (1993):*** stocks bear more risk
- **Stocks are more cost efficient (higher return on equity), while mutuals are more X-efficient (cheaper insurance):**
  - ***Gardner and Grace (1993,1994):*** **in life insurance**
  - ***Cummins, Weiss and Zi (1999):*** **in property-liability insurance**
  - ***Swiss Reinsurance Co. (1999):*** **mutuals have lower return on equity but higher solvency ratios**
- **This evidence is consistent with economic theory:**

Stocks vs. Mutuals: Theoretical underpinnings

c.f. Mayers and Smith (1988), and Smith and Stutzer (1995)

- **Stock ownership**
  - Reduces *owner*-manager agency costs
  - Provides access to capital markets
  - Should dominate in
    - commercial coverage and areas requiring managerial discretion
    - Lines with significant economies of scale
- **Policyholder ownership**
  - Eliminates *policyholder*-manager agency costs
  - Reduces moral Hazard
  - Should dominate in
    - personal lines (*less discretion required*), and
    - liability insurance (*lags may provide opportunities for managerial abuse*)
    - Environments with aggregate uncertainty

Back to hybrid model

- Who has control over management?
  - The interests of policy-holders are often in conflict with those of share-holders ***(good intentions not withstanding!)***
- Two different technologies:
  - What is the hybrid model good for, beyond raising capital?
  - Should we interpret the absence of hybrids as evidence of their relative inefficiency?

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Bounded rationality considerations

- Mutual to stock conversion trend:
  - Investors are seeking higher profits, upswing of the insurance cycle ***(c.f. Gron and Lucas (1998))***
  - This increases the supply of insurance in profitable lines and reduces it in less profitable ones ***(c.f. Born, Gentry, Viscusi and Zeckhauser (1998))***
  - Buyers of stock insurance company shares are increasing their risk exposure, and may seek increased insurance coverage at higher prices.
  - Is the net effect positive or negative?

Bounded rationality considerations

- Human decision making in the face of risk:
  - It is consistent with experimental and empirical evidence (prospect theory) that individuals may:
    - Choose to take a high-risk, high-return position.
    - To reduce the resulting risk, pay an insurance premium which results in a net loss.
  - The higher efficiency of stocks may be an illusion. More research is needed to include risk-adjusted efficiency measures industry- and economy-wide.

- See El-Gamal (2000): **http://www.ruf.rice.edu/~elgamal/gharar.pdf** for a summary of the evidence, a model of risk-trading leading to inefficiency, and a link to the Islamic prohibition of ***bay`u al-gharar***

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