Comments on:
"The Costs of Financial Frictions for Life Insurers"
by Ralph Koijen and Motohiro Yogo

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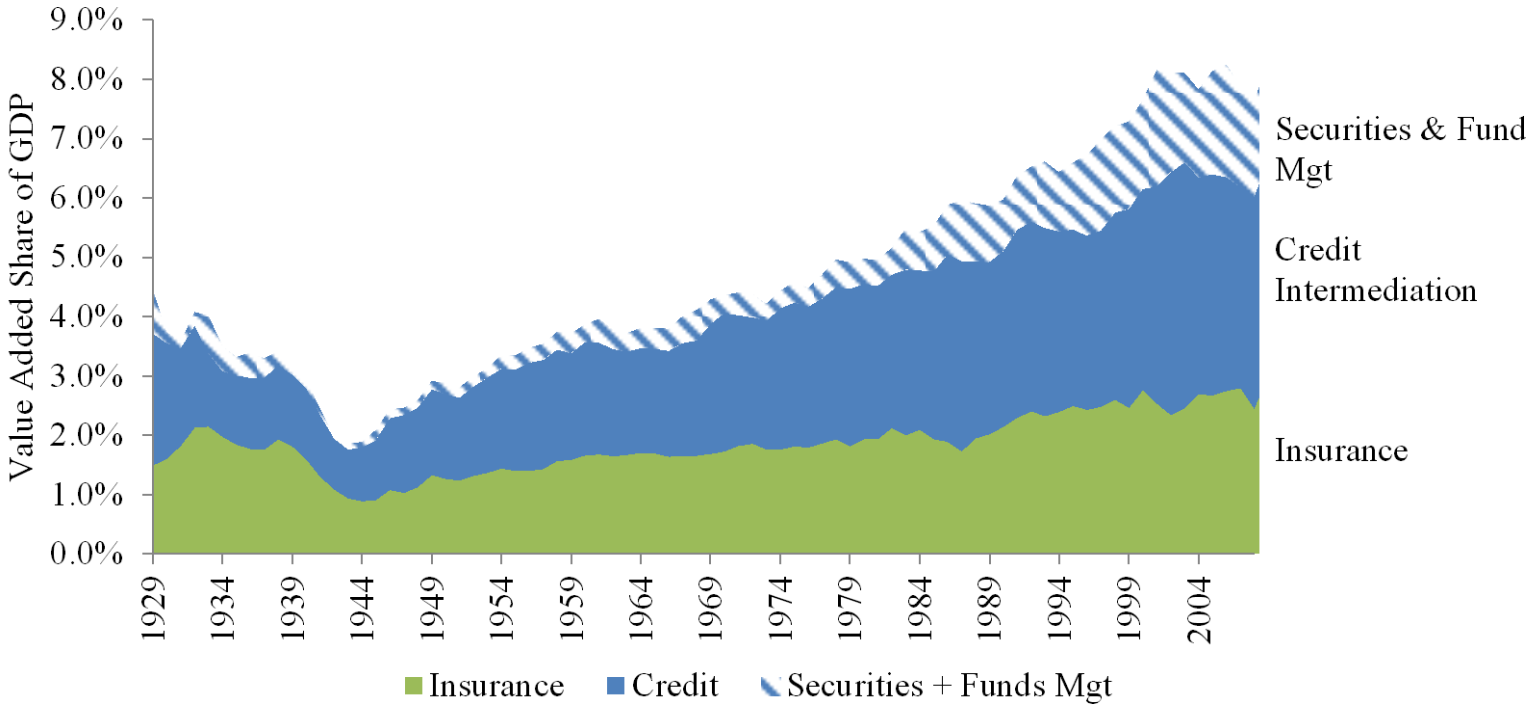
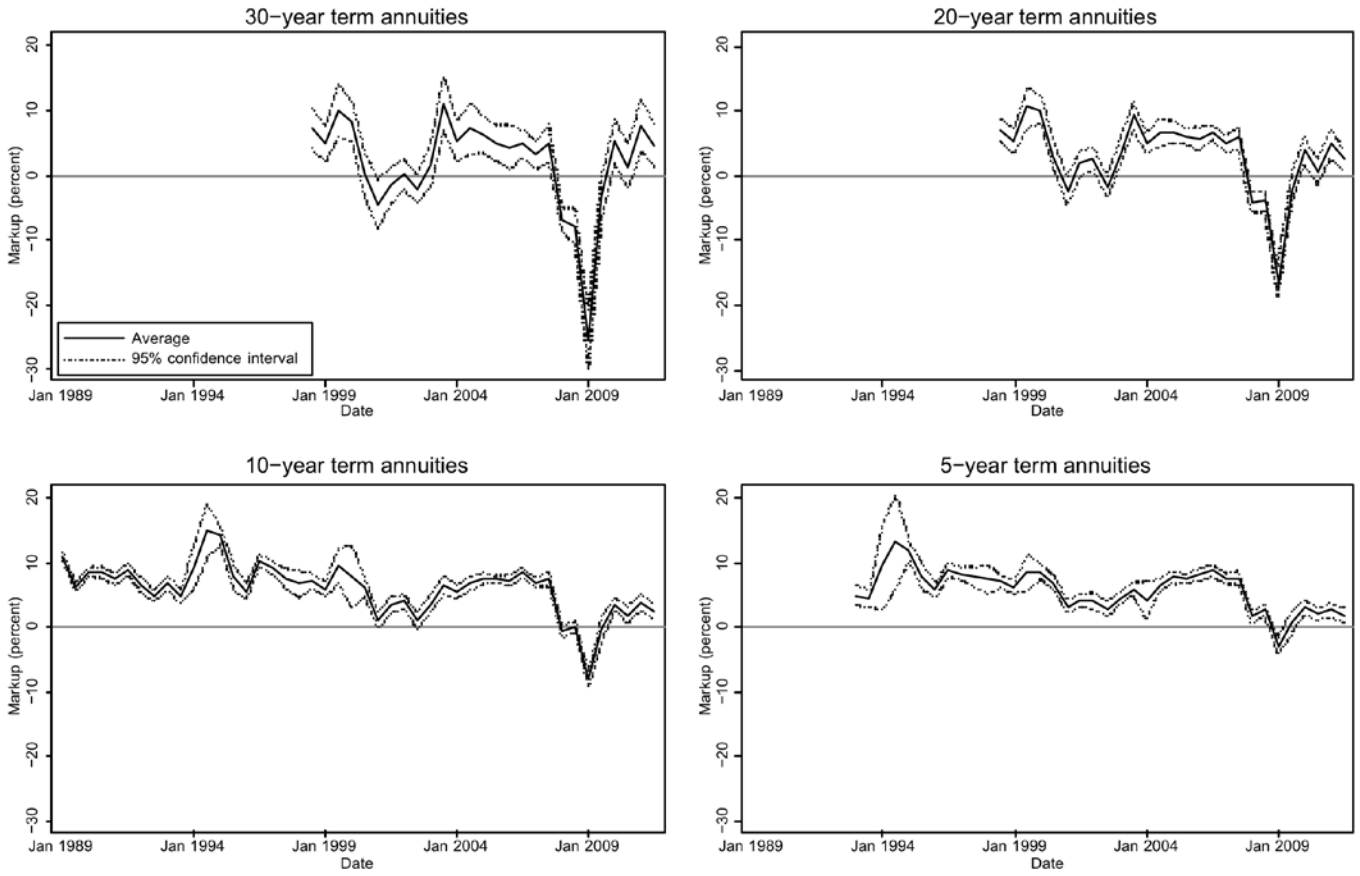
Insurance is a Big Part of the Financial Sector



The Striking Fact



Annuities usually sell at a markup over actuarial value, but sell at a significant discount to actuarial value at the peak of the crisis

The Explanation

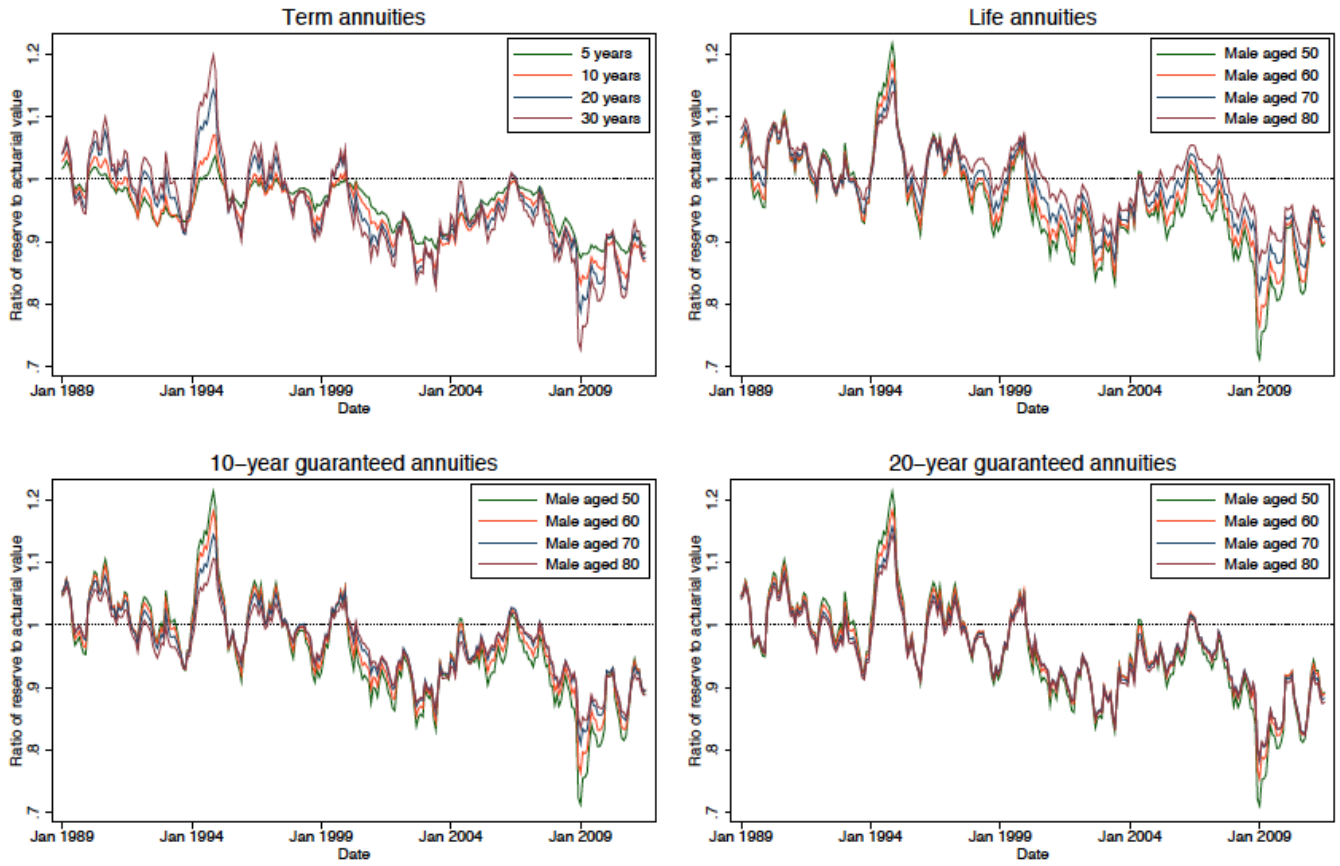
Statutory reserve regulation created strong incentives for insurance companies to offer policies (e.g., annuities) below actuarial value during the financial crisis to relax leverage constraints (i.e., increase excess reserves).

How Does this Work?

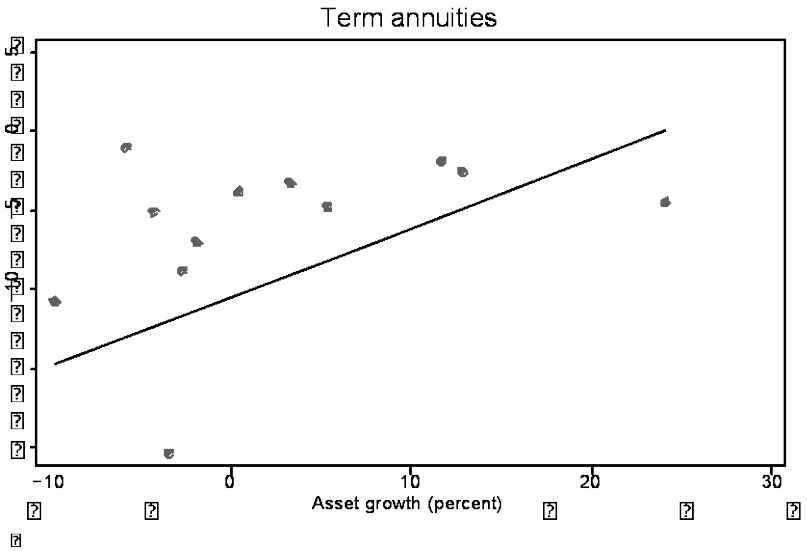
- Actual vs. Regulatory Liabilities
  - Actuarial value of 1-yr $1 term annuity is $0.97 if 1-year Treasuries yield 3%
  - Statutory reserve is only $0.956 if corporate bonds yield 5%
  - If charge a markup over actuarial value, say P=$0.98, create excess reserve of $0.024 for each policy insurer writes, which helps you meet regulatory capital

- Monopoly Pricing and Leverage Constraints
  - Standard monopoly considerations in choosing price – markup over actuarial value vs. quantity
  - But the more you sell the more excess reserves you create
  - If regulatory capital constraints are binding this will tend to make you want to lower price and sell more policies
  - This is the exact opposite of the effect of bank capital requirements
    - Deleveraging occurs by writing more insurance not less!

Statutory Reserves and Actuarial Value



Evidence for this Channel



- Insurance companies that were more capital constrained (lowest asset growth) offered policies at at the biggest discounts
- Estimates of the time series of the shadow cost of capital reveal a peak in January 2009

Some Questions

- Do insurance companies view the actual cost of a policy as the return on their corporate bond portfolio? As corporate bond yields rise in the crisis do they view the policies as less costly?
- During the crisis, there was declining demand for annuities and presumably an increase in demand elasticity. How much of the premium reduction is related to this vs. capital constraints?
- Insurers with the least capital going into the crisis took the most risk to get there. Are you selecting on firms that want to take risk through their aggressive pricing?
- Can you take advantage of different state regulations on capital to further identify the effects of capital constraints?
- In a time series, can you look at how shocks to capital and gap between actuarial value and statutory reserve value affect annuity pricing?
- Can you learn something about competition by looking at how shocks to the capital of one insurer affect the pricing of annuities of other insurers?

Some Broader Perspectives

- Linking liabilities to portfolio returns is very problematic. Novy-Marx and Rauh show that public pension plan liabilities are significantly underestimated because future liabilities are discounted by portfolio return forecasts
  - This may induce public pension funds to go into riskier asset classes so they can understate their liabilities and overstate their solvency
  - How much of the demand for high risk, high cost alternative investments is driven by this accounting?

- Is there a parallel here to risk weighted assets in bank capital regulation?
  - If RWA doesn't adjust to risk changes, you load up on assets that have low risk weights but are in fact quite risky
  - Does this have implications for the pricing of those assets?

- Policy Implications