Overconfidence and Speculation

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Observation on bubbles

- Difficulty of explaining prices with fundamentals.
- Large trading volume
  - internet stocks 6% of capital, 20% of volume
  - spin offs (Palm etc…), average of 6 cases, 38% daily.
- High volatility.
  - Palm 15.4% weekly.

Modeling bubbles

- A model of bubbles must generate excessive trading.
- Model based on heterogeneous beliefs generated by overconfidence.
- Use model to gain insight on compensation, corporate strategies etc…

Outline

- Discuss a theoretical model of speculation based on overconfidence.
- Present some empirical evidence.
- Discuss implications of theory for understanding recent executive compensation scandals.

Overconfidence

- Psychological experiments indicate that most people overestimate the precision of their knowledge.
- Overconfidence is more pronounced when questions are more difficult.
- Illusion of knowledge.
- Men are more overconfident than women.

Henry Blodget quoted by Michael Lewis

"*We all have the same information, and we're just making different conclusions about what the future will hold.*"

Michael Lewis quoted by Michael Lewis

“I had been to a Merrill Lynch conference (them again!) that featured Exodus Communications, and the story Henry Blodget and a few other people told was so good that I figured that even if Exodus Communications didn't wind up being a big success, enough people would believe in the thing to drive the stock price even higher and allow me to get out with a quick profit."

Outline of model

- Two groups , A & B.
- Everyone sees all signals but group A is overconfident on one signal whereas group B is overconfident on another signal.
- Buyer of an asset acquires option to sell asset.

Outline of model…

- Option is American.
- Value that buyer is willing to pay today depends on prices he forecast he will obtain in the future.
- Equilibrium.

Equilibrium

- Buyers are willing to pay more than they think the asset is worth because they obtain also an option. Value of option is related to how much they think they can get for the asset in the future, in excess of their own valuation.
- Option is exercised (sale) whenever price others are willing to pay exceeds “sufficiently” their own valuation.
- Critical value of difference in opinions.

Bubble

- Bubble = value of option.
- “Underlying” of bubble is difference in opinions.
- Bubble is larger if opinions are more volatile.
  - With more overconfidence.
  - The less the precision of signals over which everyone agrees (dividends ?).

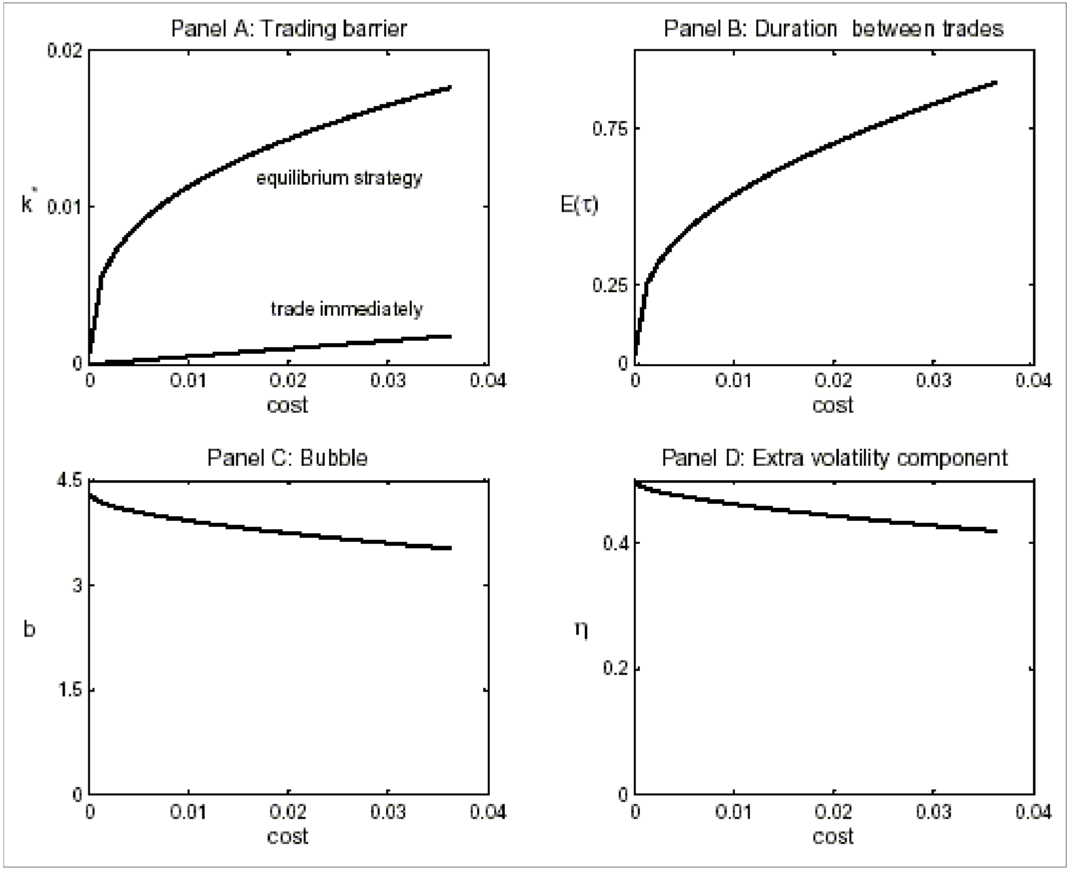
Turnover

- Turnover is determined by how often critical values are reached.
- Turnover increases with volatility of opinions.
  - higher volatility increases critical value.
  - higher volatility makes it easier to reach a given level of difference in opinions.
- No causality.

Transaction costs

- A cost of transactions decrease turnover substantially.
- The effect on the bubble or volatility is much more modest.
- Tobin tax.

Effect of transaction cost



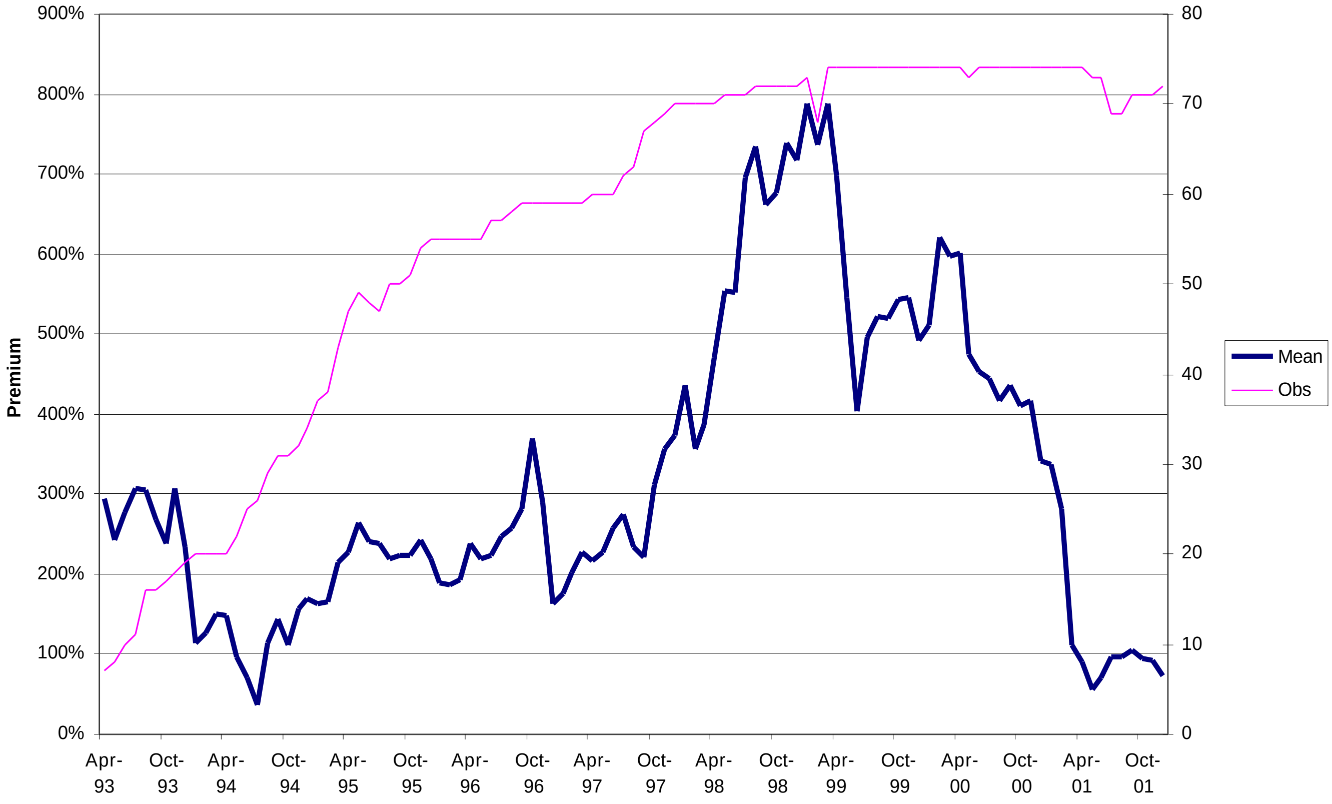
Real-estate bubbles

- “*While stock market turnover is more than 100% annually, the turnover of home ownership is less than 10 per cent annually* - *scarcely tinder for speculative conflagration.*” (Alan Greenspan quoted in Financial Times, April 22, 2002)

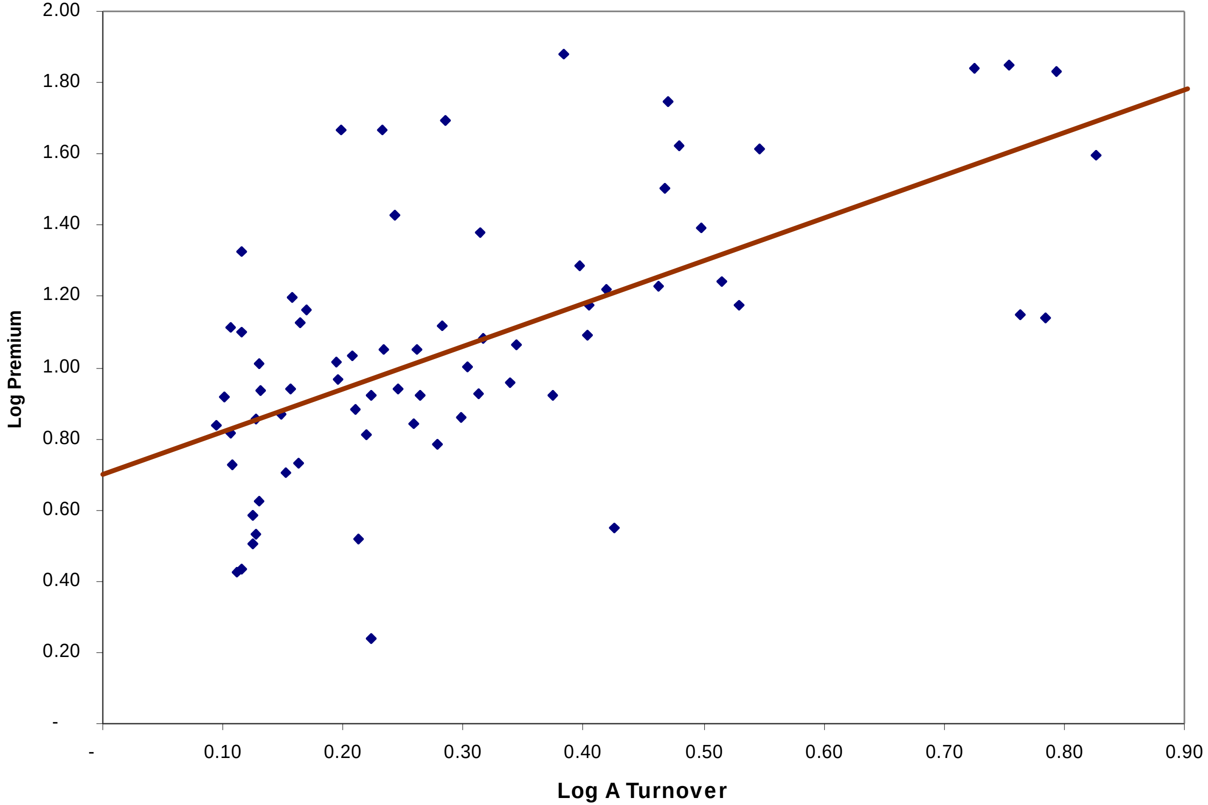
Chinese *A* & *B* Shares

- In the 90's, 71 Chinese firms issued two class of shares, with same rights.
  - *A* shares for Chinese residents.
  - *B* shares for foreigners.
- Until Dec. 2000
  - average class *A* share sold for 5 x *B* share of same firm.
  - Cross sectional sd of premium similar to sd over time of average premia.
  - turnover of *A* shares 46% per month.
  - turnover of *B* shares 8% per month.

Number of firms with A & B shares and average premium.



Premium and turnover of *A* shares



Empirical results

- Panel regression.
- Time variation of premia well explained by variations in Chinese and US interest rates, and Chinese sovereign spread.
- A stock that has a turnover that is one s.d. above average has a premium that is 100 points above average (500 vs. 400%).

Corporate compensation

- 25 largest bankruptcies in 2001 – 2002.
- 52 executives and directors > 10M, 31 > 25M, 16 > 50M, 8 >100M.
  - Ken Lay (CEO, Enron), 247 M, Gary Winnick (CEO, global crossing), 512M.
- Challenge to standard “agency” view of executive compensation.
- Popular view: rent extraction by CEO's.
- Need better governance.

Alternative view

- Special period of bubble.
- Stock price= long-run fundamentals + speculative value.
- Compensation used by controlling shareholders to motivate behavior that boosts speculative value, perhaps at the expense of fundamentals.
- Better governance not a solution.

Compensation policy under speculation

- “Classical” compensation analysis accounting for speculation.
- In speculative markets compensation designed more towards short term rewards.
- Actions by CEO’s designed to boost speculative component.
  - actions that **may** generate outcomes that lead **some** investors to predict success.

A change of mind.

"In the bubble, the carrots (options) became managerial heroin, encouraging a focus on short-term prices with destructive long-term consequences. ... It also encourage[d] behavior that actually reduced the value of some firms to their shareholders - such as making an acquisition or spending a fortune on an internet venture to satisfy the whims of an irrational market."

Michael Jensen, The Economist, November 2002.

Conclusions

- Better governance will not solve these problems.
- Option grants?