Discussion of:

If at First You Don't Succeed... An Experimental Investigation of the Impact of Repetition Options on Corporate Takeovers and the Provision of Public Goods

by Ann B. Gillette, Georgia State University
Thomas H. Noe, Tulane University

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Discussant:

Kent Daniel
Kellogg School, Northwestern and NBER

The Game:

- Players:
  1. One "raider" with no toehold
  2. Seven (anonymous) shareholders - one share each
- Value of the firm is \$0 without raider
  - Value of the firm becomes \$1/share if raider acquires control. (actually \$2, but normalize to 1 here)
- Game Sequence:
  1. Raider makes conditional tender offer
     - offer between \$0 to \$1/share, hopefully!
  2. Each shareholder then observes the offer, and tenders or not.
  3. If > 4 ($> 50\%$) of the shares are tendered, raider buys all tendered shares at offer price. \$1 liquidating dividend is then paid to current shareholders.
  4. If < 4 shares are tendered, raider does not buy shares
     - Ball is then drawn from urn to determine if another round will be played (prob $= 0.01, 0.75$ or 0.95)
     - If game does not continue, shareholders get nothing.
- Also run experiment where shareholders have multiple shares.

The Equilibrium

Results:

- In one-shot game ($\delta = 0.01$), average bid is "almost perfectly consistent with Nash equilibrium predictions."
  - Of course, there is considerable individual variation in bids.
- With higher probability of continuation ($\delta = 0.75, 0.95$):
  - Theory predicts lower bids than in one-shot game.
  - Average bid is lower than in one-shot game, but higher than predicted by theory.
  - But, average *winning* bid is higher than in one-shot game.
  - Average winning bid is higher than predicted by theory
  - Bidders pursue non-stationary "escalating-offer" strategies.
- Conditional on equilibrium bid, shareholders:
  - Under-tender in one-shot game
  - Over-tender in games with continuation
- Conditional on actual bid, shareholders:
  - Under-tender for $\delta = 0.75$ case,
  - Over-tender for $\delta = 0.95$ case,
    - "especially surprising given the observed pattern of raider offer escalation in such cases."
    - One could add that the over-tendering is especially surprising given the over-tendering of the other shareholders.

What are the Players' Actual Decision Rules?

- This model of the players' decision rule is rejected, but what is an alternative that might explain these data?
- It seems unlikely that the players understannd the mixed-strategy equilibrium
- Players are probably seeing this as a bargaining game
- This suggests that the outcome is related to that in "ultimatum" games.
  - shareholders are only willing to accept a "fair" offer.
- Perhaps this explains why winning bids don't vary much with the continuation probability, and why shareholders "overtender" at high continuation probabilities.
- What is "fair" here is different than in ultimatum game, because division is between raider, those who tender, and non-tenderers.
- with 4 tenders, at a price of 0.75, division is:
  - raider: \$1.00
  - tenderer: \$0.75
  - non-tenderer: \$1.00

Why the increases in the bid in the repeated game?

- In repeated game (*e.g.,* high probability of continuation, players are perhaps "negotiating" by starting low, and raising their price when they are not successful.

Tests with Power Against Ad-Hoc Hypothesis:

- Results currently suggest that players are "rational" in the one-shot (0.01) case, are bid "too-high" in the repeated game (0.75 and 0.95).
- Is this robust to changes in the game parameters?
  - If the game were to specify that the raider must pay a fee of \$0.25/share to make an improvement, would the results still hold?
  - If $N > 7$, (or < 7), how does the bidder strategy change?
  - If continuation probability is increased to (closer to) 1, how will results change?