Discussion of: *The Chinese Warrants Bubble* by Wei Xiong and Jialin Yu

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Bubbles are an extreme and damaging form of market irrationality and inefficiency.

Experimental settings appear to validate their existence and document some characteristics.

**Existence?** Have asset-price bubbles actually been observed ‘in the wild’?
- Dutch tulip mania, South Sea bubble, the late 90s Internet bubble?
- Garber (2000) claims to explain Dutch and South Sea bubbles using fundamentals
- Pastor and Veronesi (2006) and (2009) argue for rational explains of bubbliness in Internet stocks

**Mechanism?** If Chinese Warrants was a bubble, do existing theories explain the mechanics of it?
- What factors contributed?
- What characterized trading and price dynamics?
- Is the structural explanation of the mechanics?
Introduction

Market Setting

- time frame: 2005-2008

- 18 put warrants and 37 call warrants issued by Chinese companies
  - traded on Shanghai and Shenzen stock exchanges
  - Warrant is like a regular option, except you buy/sell stock directly with underlying company
  - issuance allowed as part of a broader reform of securities market in 2005
  - liquid, traded like stocks except no stamp tax, less trading restrictions

- Short selling stocks or warrants is prohibited

- Companies have hard time issuing more warrants due to restrictive quotas
Was It a Bubble?

In a word: YES

- stock prices skyrocket from 2005-2007 pushing put warrants deep out of the money
- But put warrant prices skyrocket too!!
- Warrant trades at thousands of times Black-Scholes price
- The underlying stock is restricted to fall at most 10% a day but most warrants trade for some time at prices greater than the upper bound this implies
- Some Warrants trade higher than their strike price – a guaranteed loss !!!
Example: WuLiang put warrant (strike = 7.96 and expiration 4/2008)

- WuLiang stock goes from 7.11 (4/2006) to 71.56 per share (10/2007)
- Put warrant price increases from 0.99 (4/2006) to hi of 8.15 (6/2007) (intraday 9.33)
- BS value is below 0.05 from 7/2007 until expiration 4/2008
Introduction

Potential Bubble Mechanisms

- Hedging Premium?
  NO, magnitude is way off.

- Rational Bubble?
  NO, warrant has \textit{finite} maturity.

- Institutional churning?
  NO, anyway only 1-2\% is institutions.

- Lottery ticket?
  NO, small payoff and high price so this doesn’t resemble a lottery anyway

- Resale Option Value? [Harrison and Kreps (1978) and Scheinkman and Xiong (2003)]
  1 short-sale constraint? YES
  2 Heterogeneous beliefs about fundamentals (payoffs) that fluctuate over time ???
    \rightarrow stock price observable but beliefs about dynamics will vary

Discussion: \textit{The Chinese Warrants Bubble}
Resale Option Theory

Consistent with predictions of Resale Option Theory:

1. positive relationship between bubble size and trading volume
   - look at prices during ‘zero-fundamental period’ so bubble size = warrant price
   - in general, volume and volatility are super high

2. positive relationship between bubble size and warrant volatility

3. negative relationship between asset float and bubble size
Does the Resale Option Value Account for (a significant portion of) the Bubble?

- Investors need to hold different beliefs about warrant fundamentals but ...
- Paper argues (successfully) there is no remotely reasonable belief consistent with warrant prices
  
  "our analysis shows that the traded warrant prices were too high to be justified by any reasonable belief of a representative investor"

(1) During zero-fundamental period there is essentially zero chance of exercise:

(2) Put price was sometimes greater than the strike! – this is inconsistent with any beliefs about fundamentals

(3) “Some warrant investors . . . confused put warrants with call warrants”
  
  ⇒ 13 warrants had irrational exercises by investors at losses!!

- This does not really look to me like a difference in beliefs about fundamentals

  Question: If you can prove a bubble (as here), can resale option be the driver??
Introduction

Conclusion

- Makes an Important Contribution: Proves Bubbles do Exist ‘In the Wild’
  - Market irrationality

- Highlights Importance of Short-Sale Contraints

- Characterized by Large Volumes and High Volatility

- Mechanism? – Resale Option or Something Else?
  - Blind Gambling, Confusion, Stupidity?

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