BUBBLES AND CENTRAL BANKS

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Why Care?

- Bubbles can result in misallocation of capital and resources, affect investment decisions, and have considerable economic impact.

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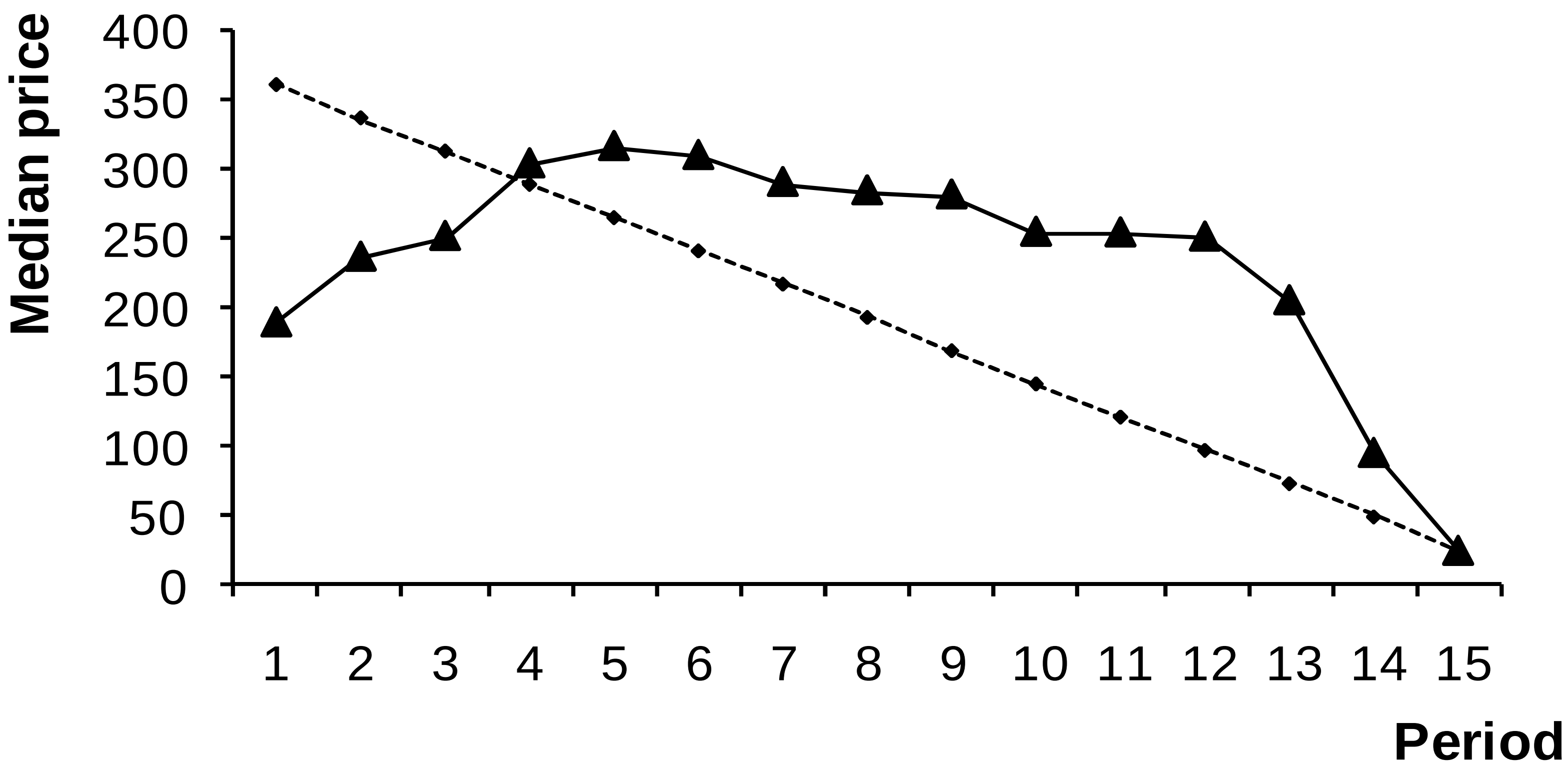
Can we really avoid bubbles?

- Experimental Evidence: Bubbles & Crashes can take place in very simple environments with little/no uncertainty about future cash flows (no need for exotic derivative mortgage products, agency problems, etc.)

Bubbles arise even in the simplest environments:

(Ikramov and Yavas, *Real Estate Economics*, 2011)



Vast Literature on Bubbles in the Lab

- Smith, Suchanek, and Williams (1988, Econometrica)
- King et al. (1993, Oxford University Press)

Van Boening et al (1993, Economic Letters)

- Porter and Smith (1995, Journal of Business)

Noussair, Robin, Ruffieux (2001, Experimental Economics)

- Lei, Noussair, Plott (2001, Econometrica)
- Haruvy and Noussair (2006, Journal of Finance)

And Bubbles are Robust to Changes in Market Environment

- *Porter and Smith (1995, Journal of Business):* The market is not more efficient when the dividends are certain.
- *Noussair, Robin, Ruffieux (2001, Experimental Economics):* Bubbles form even when the fundamental value of the asset is constant throughout its lifetime.
- *Lei, Noussair, Plott (2001, Econometrica):* Market is (still) inefficient when speculation is not allowed.
- *Haruvy and Noussair, (2006, Journal of Finance):* Allowing for short selling does not result in an efficient market.

Is it the Subject Pool?

- Porter and Smith (2003, *J of Behavioral Finance*) conduct sessions with students, mid-level corporate execs and over-the-counter market dealers and find no significant effect.

Surprised?

- "In a set of eBay auctions of Amazon.com gift certificates, 41.1% of winning prices exceed face value, which is an observable upper bound for rational bidding because Amazon.com sells certificates at face value."

Matthew T. Jones (2011) "Bidding fever in eBay auctions of Amazon.com gift certificates Purchase"

Historical examples of bubbles

- Famous historical examples of bubbles include the Mississippi Bubble (1719-20), the South Sea Bubble in England (1720) and the Roaring 20's that preceded the 1929 crash.
- On October 19, 1987, Black Monday, the U.S. equities lost more than 20% of their value in one day, the worst single day in market history.
- Internet share prices plummeted 75% from their peak in March 2000 to the end of 2000.

The mother of all bubbles: Dutch Tulip Mania (1634-7)

- A single Tulip bulb (e.g., Semper Augustus) sold for more than 5,000 guilders - the equivalent of more than $60,000 today.
  - ✓ many years' salary

http://en.wikipedia.org/wiki/File:Semper_Augustus_Tulip_17th_century.jpg

A (relatively) successful internet stock

Institutions Matter

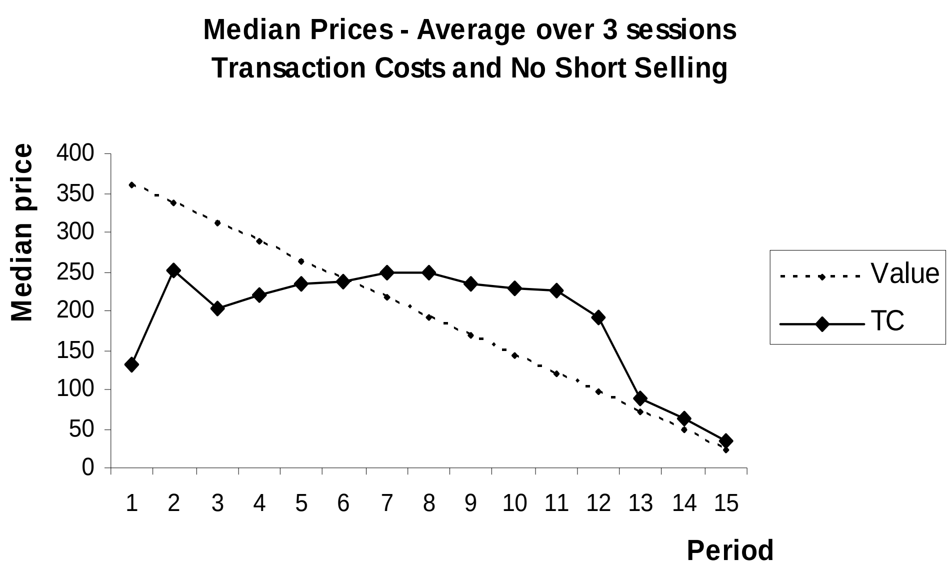
- Bubbles are unavoidable, but institutions matter for the <u>duration</u> and <u>magnitude</u> of bubbles.
  - ✓ Transaction costs
  - ✓ Short selling restrictions
  - ✓ Divisibility of the asset
  - ✓ Experience
  - ✓ Information about valuations

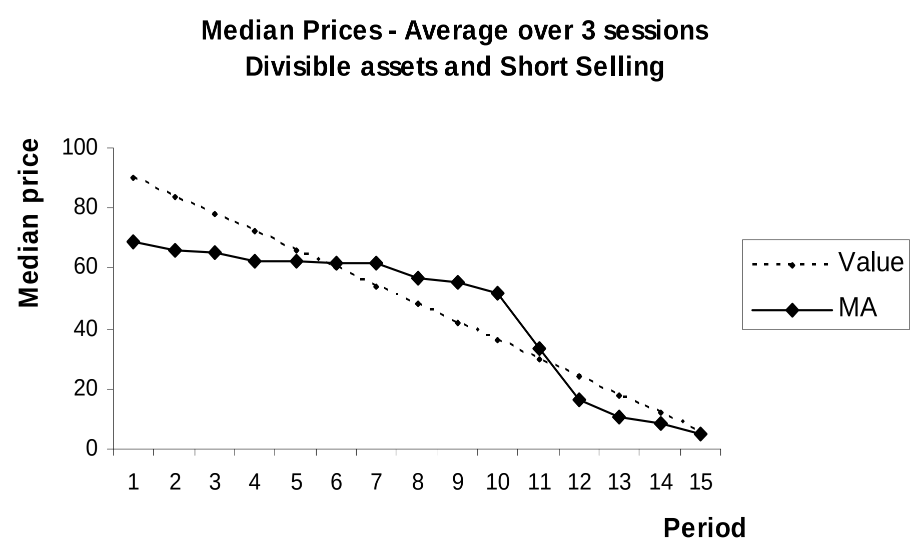
RE bubbles are more serious

- Most of literature on bubbles deal with central banks' reaction to stock market bubbles.
- But, house price fluctuations impact aggregate spending more than stock returns.
  - ✓ Households borrow in nominal terms using real estate as collateral.
  - ✓ Housing is the biggest component of a typical household's wealth.
- House price inflation is a better predictor, than stock price inflation, of both inflation and output (two components of inflation targeting)

What experimental evidence also shows is that

- Compared to financial markets, real estate markets involve longer boom and bust periods and lower turnover (Ikramov and Yavas, *REE* 2011).





Historical evidence

- Historically, equity price busts occur on average every 13 years, lasts for 2.5 years, and result in about 4 percent loss in GDP. Housing price busts are less frequent, but last nearly twice as long and lead to output losses that are twice as large (IMF World Economic Outlook, 2003).
  - ✓ Need to pay closer attention to housing prices

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Should CBs react to bubbles? Literature in a nutshell

- Bernanke and Gertler (2001), Greenspan (1999,….) argue that CBs should not respond to asset prices, unless they impact inflation expectations.
- The FED should "mop up after" (to prevent the bubble burst from causing economic and financial damage).
- vs.

  Cecchetti, et. al. (2000) argue that central banks can improve macroeconomic performance by responding to excessive asset price movements.

First things first: Central Banks cannot avoid getting involved

- **The Q is not** whether to get involved or not, but rather whether to get involved pre- or post-burst…
  - ✓ Central banks are forced to provide liquidity during a crisis caused by the bursting of a bubble because they are the only institutions capable of doing so.

Two major fundamental difficulties in getting involved during the bubble period:

- 1. How do we know that there is any deviation from fundamentals? (what is the fundamental value?)
  - ✓ If there is an innovation , asset values should rise, but by how much?
    - Internet and technology bubble
    - Increasing availability of mortgage debt and the demand for housing
- 2. What constitutes a bubble? 10% deviation? 20%? 23.14%?
  - ✓ Do they even exist? (Efficient Markets Hypothesis)

Asymmetric Response by Central Banks. Why?

- ***Asymmetric*** response by the FED because it is easier to identify a bursting bubble than a rising bubble!
  - ✓ **But** economic policy is about making assessments of uncertain events.
- Easier to justify monetary easing after the crash than monetary tightening in good times
  - ✓ **But** central banks are supposed to be countercyclical and party crashers (that is why they are independent).

Should Central Banks Target Bubbles?

- We do not know for sure if there is a bubble!!
  - ✓ **But** Monetary Policy always involves uncertainty: How certain are we about the components of "Taylor rule?"
  - ✓ How would MP react? Tighter monetary policy, than a standard Taylor rule would suggest, when a bubble is rising; and a looser policy when a bubble is bursting.

Should Central Banks Target Bubbles?

- Using interest rate to burst a bubble, You impact every sector of the economy: inefficient and misallocation of resources.
- **But**,

  a) bubbles cause significant misallocation of resources as well and

  b) you impact every sector every time you change the interest rate

Should Central Banks Target Bubbles?

- "Bubbles should be dealt with supervision and regulation of the financial system (e.g. limiting LTV and debt-to-income ratios), not monetary policy"
  - ✓ Capital gains tax in Singapore
  - ✓ Difficulty of implementation (recent example of BDDK)
  - ✓ Bubbles can occur regardless of the quality of financial market supervision and regulation (Ikramov and Yavas, 2011, …)

Should Central Banks Target Bubbles?

- Greenspan (2004) and Bernanke (2002): in order to prick a bubble, the monetary policy response would include a sharp increase in interest rates, and such monetary tightening would lead to a recession and create greater damage than the bubble.
  - ✓ Bubbles were pricked successfully with modest increases in interest rates in England (2003-2004), Australia (2003-2005), New Zeland (2003-2004).

Australian example

- The RBA paid close attention to such indicators as the income / home prices ratio and the number of mortgage loans taken out for speculative / investment purposes.
- As a result, the RBA refused to cut rates in 2002-03 when world economies suffered after the September 11 attacks, the SARS outbreak and the Iraq war.
- They also tried to convince potential buyers not to invest in RE.
- They were successful: growth in house prices decreased from 19% to 9% in six months by June 2004. The rate went further down to 0.1% by March 2005.
- Worth noting that they were helped by the fact that 80% of mortgages in Australia are variable-rate loans (vs. around 20-30% in the US).

Conclusion

- Bubbles are with us, regardless of what we do.
  - ✓ However, we can impact their duration and magnitude.
- It is challenging for MP to deal with bubbles
- However, there are compelling reasons for MP not to wait until the bubble burst.
- A good approach would be to have coordinated effort by MP and regulatory agencies (e.g., recently formed Financial Stability Committee in Turkey).

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