Asset Markets

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Economics 176

Financial Market Experiments

Two distinct literatures on financial markets:

Experiments in which diffuse information is provided to subjects.

- The question is whether the market price over time comes to "aggregate" all of the available information.
- There is a lot of information that this actually happens.
- Supports an important component of economic theory regarding the behavior of financial markets.

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Experiments in which subjects with no special private information trade financial assets over long horizons.

- The question is whether markets for such long-lived goods generate asset market bubbles.
- We will focus on these types of markets.

Basic Setup (Smith, Suchanek and Williams, 1988)

In 1988 SSW (1988) introduced the canonical asset markets experimental design.

- Subjects are endowed with x units of cash and y units of an asset.
- Subjects choose whether to be buyers nor sellers with each trade.
- Each unit of the asset pays off a random amount from a distribution known to subjects, each period.
- Trade occurs via double auction.
- 15 trading periods and *units and cash are carried over from period to period.*

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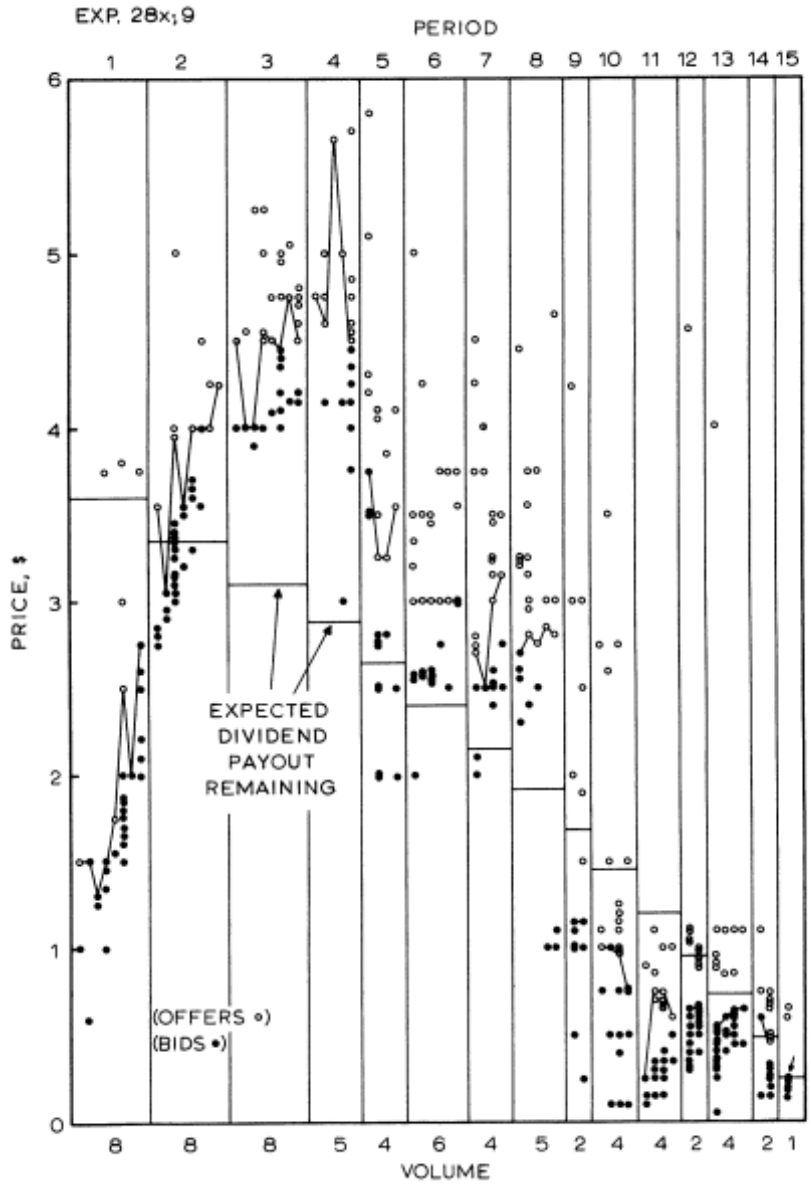
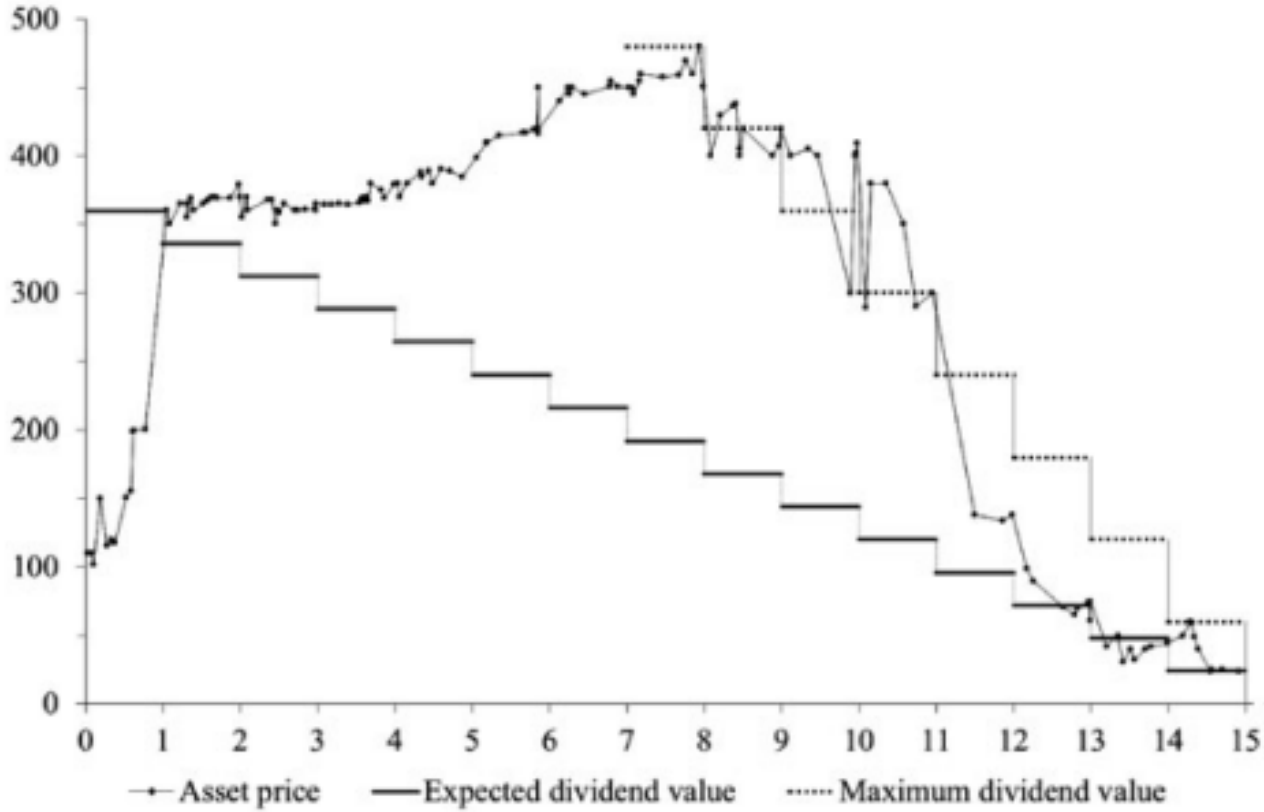
This design was originally meant to be a control treatment with no bubbles!

What happens?



Has been replicated many times



A recent example (Palan 2010).

Common Pattern

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- Prices start out low (below fundamental value).
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Note the marked difference with typical double auction experiments

- Prices do not seem to follow typical predictions of competitive theory.
- Standard economic forces do not seem to apply.
- Why?

Experience

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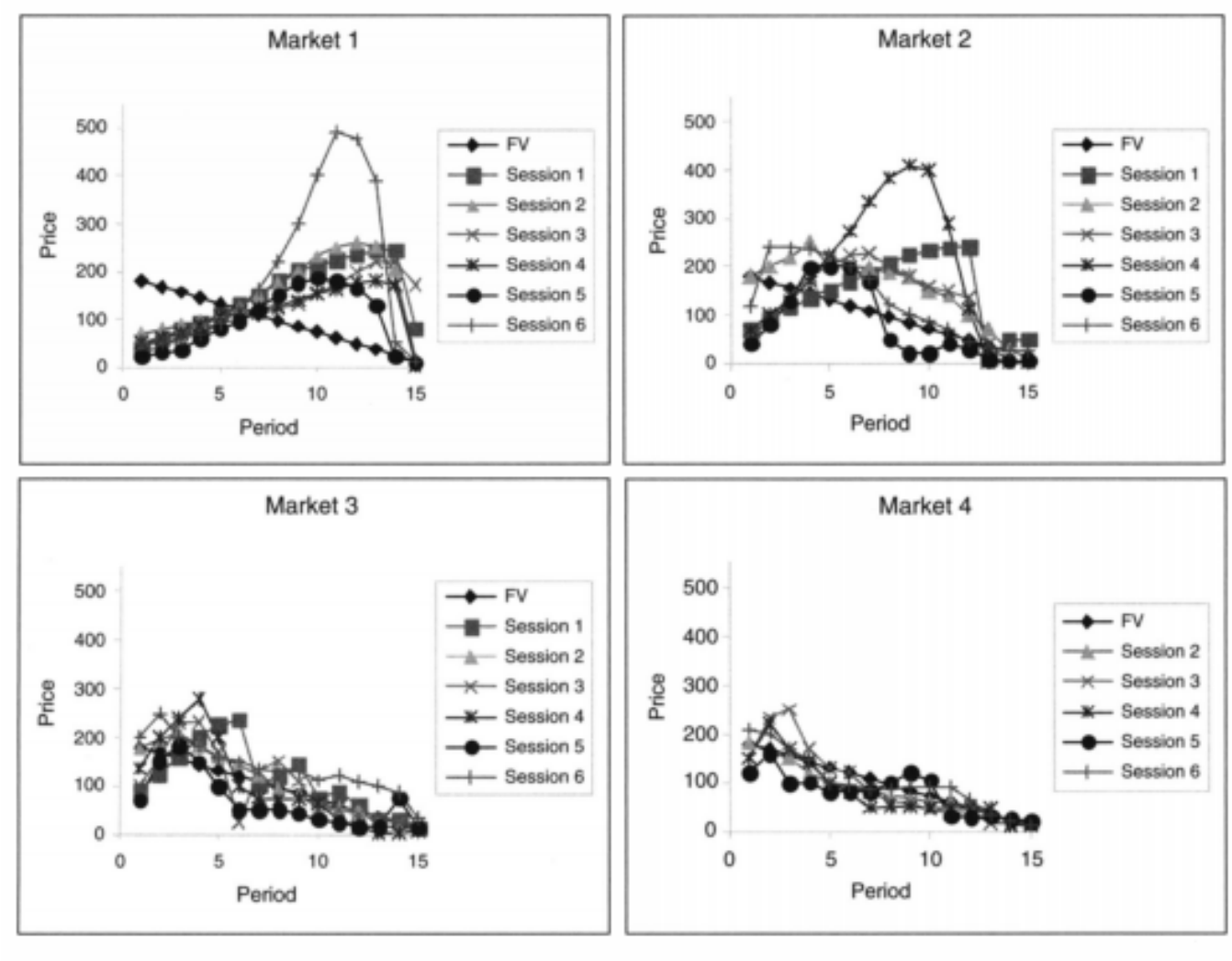
A number of studies have attempted to examine this.

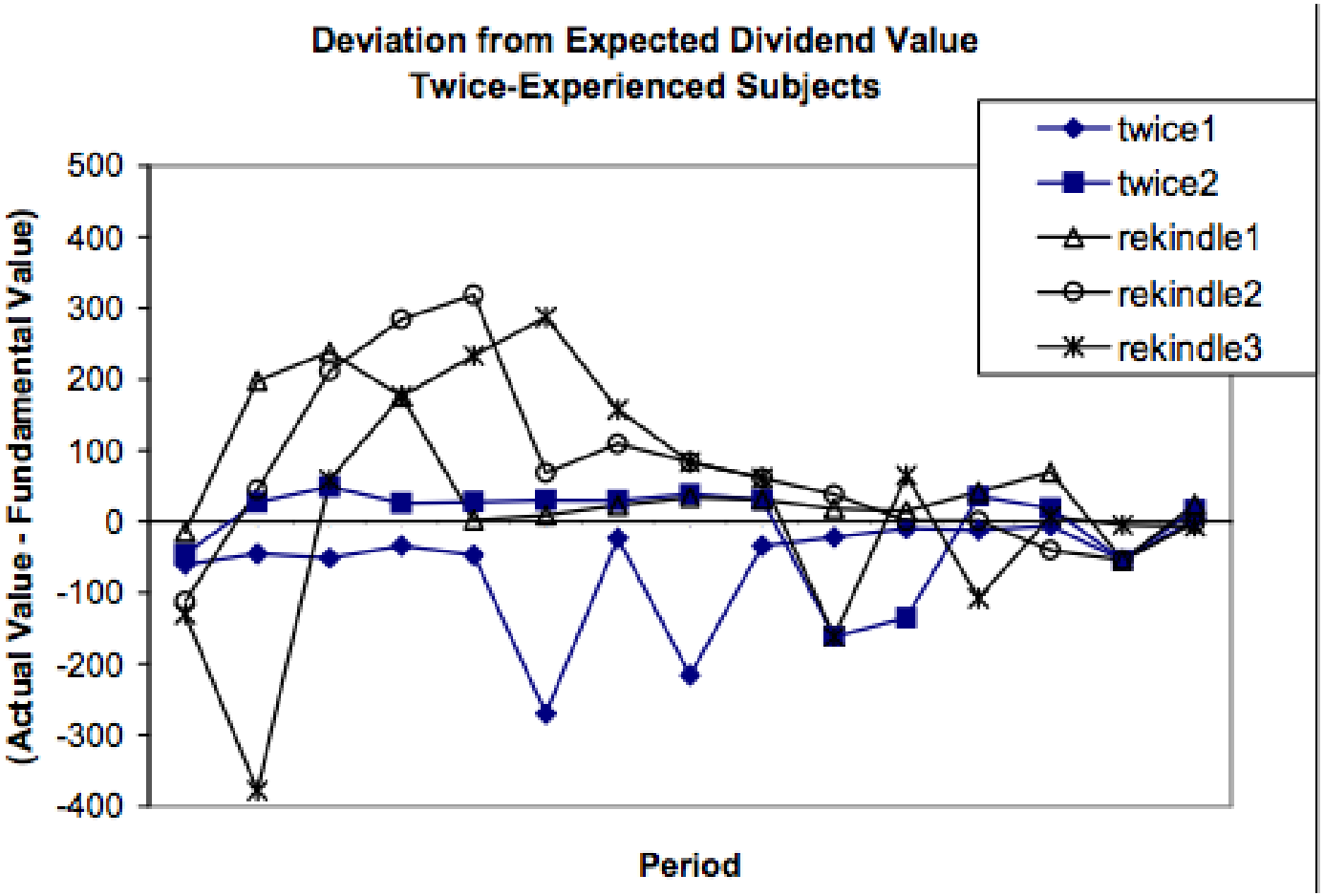
- One way is to invite subjects to return for additional sessions (these sessions are long).
- Another is to run multiple markets within the same session.
  - Double auctions take a long time.
  - Instead some (such as Haruvy et al. 2007) have used simultaneous call markets instead.

Experience



Plot from Haruvy et al. (2007).

But wait... Hussam et al. (2008)



- Twice experienced subjects don't bubble.
- But if you change cash amounts and dividend variance (rekindle), they do!

Cash to Asset Ratio

One factor that seems to affect asset market bubbles is the amount of free cash available (relative to assets)

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- Find that each unit of additional cash per share, adds (on average) \$1 to the maximum price reached by the asset!

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One artifact of the standard design is that the cash/asset ratio is constantly increasing over the course of the experiment, perhaps fueling the bubble.

- Kirchler et al. (2012) control this by setting dividend payments aside, and withdrawing cash from subjects' accounts each period.
- This largely eliminates bubbles (at least on average).

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Demand effects or activity bias?

- Lei et a. (2001) also run treatments in which subjects can participate in another, non-speculative market.
- Again, bubble-like trading emerges.

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- Kirchler et al. (2012) make fundamentals flat by adding a termination value and zero expected dividends.
- Also consider a reframing of the declining fundamental value case as an exhaustible resource.
- Some experiments have intensively trained subjects on how to calculate fundamental value (i.e. Lei and Vesely 2009)
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- Bubbles re-emerge strongly.
- It isn't just confusion but also beliefs about others' confusion that matters.

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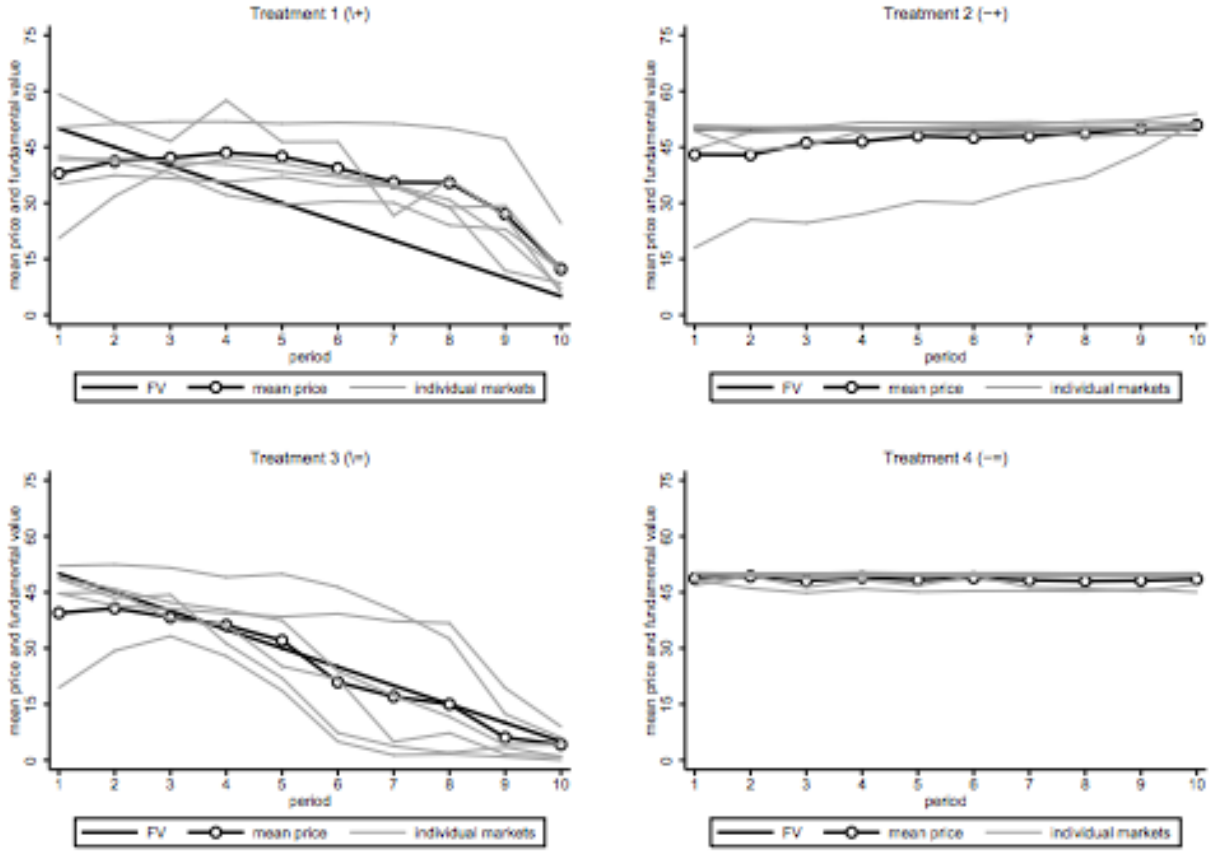

- Data from Kirchler et al. (2012)

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These are factors that seem to be present in many famous, naturally occurring bubbles as well!

- South seas bubble.
- Dot com bubble.