Discussion of

The Anatomy of Sentiment-Driven Fluctuations

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Definition

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1. *common* shock to beliefs, unrelated to fundamentals ...

2. about *local* conditions ...

3. that arises *endogenously.*

Summary

Characterize scope for sentiments in an information-robust way.

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Characterize scope for sentiments in an information-robust way.

Results:

- Amazingly general
- Only iid fluctuations if past conditions observable
- Otherwise, persistent sentiments possible

Discussion

1. Intuition for sentiment
2. Link between sentiments and fundamentals
3. Importance of observations from the past

Intuition

Intuition: IID example

action: $a_{i,t} = \alpha E_t^i[u_{i,t}] + \varphi E_t^i[\theta_t]$ info: $x_{i,t} = \beta a_t + (1-\beta) u_{i,t}$

Intuition: IID example

$$a_{i,t} = \alpha E_t^i[u_{i,t}] + \varphi E_t^i[\theta_t] \qquad x_{i,t} = \beta a_t + (1-\beta) u_{i,t}$$

Everything normal, iid, with unit variance.

Optimal action linear in signal:

$$a_{i,t} = w_i x_{i,t}$$

Integrate...

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$$\Downarrow$$

the rational expectations restrictions on sentiment!

Link to Fundamentals

To solve...

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- optimal inference

$$w = \frac{\alpha(1-\beta) + \varphi \beta \phi_2}{(\beta\phi_1)^2 + (\beta\phi_2)^2 + (1-\beta)^2}$$

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1. case $\varphi = 0$: either θ_t or ϵ_t can play role of sentiment...or a combination.
   - pick just one, and (2) delivers a quadratic with at most two sol'ns.
   - keep both, and (2) delivers a circle with sentiment allocated to either shock.

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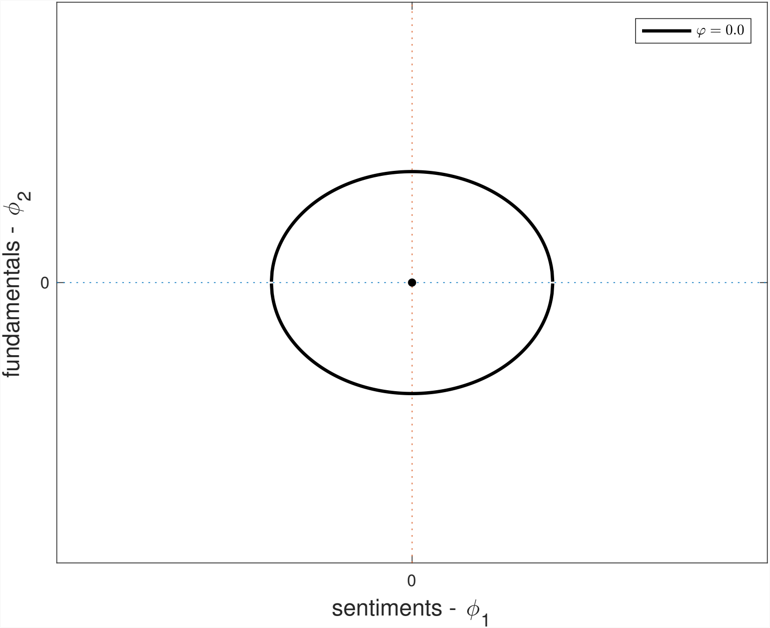
   - pick just one, and (2) delivers a quadratic with at most two sol'ns.
   - keep both, and (2) delivers a circle with sentiment allocated to either shock.
2. case $\varphi > 0$: (2) still delivers a circle
   - fundamentals can "carry water" for sentiment, or ...
   - sentiment can neutralize fundamental

Sentiments and Fundamentals



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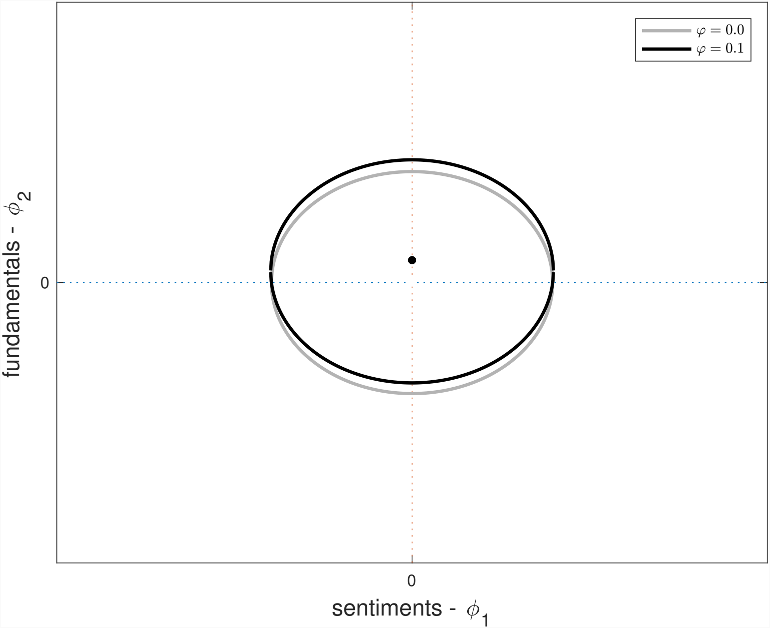

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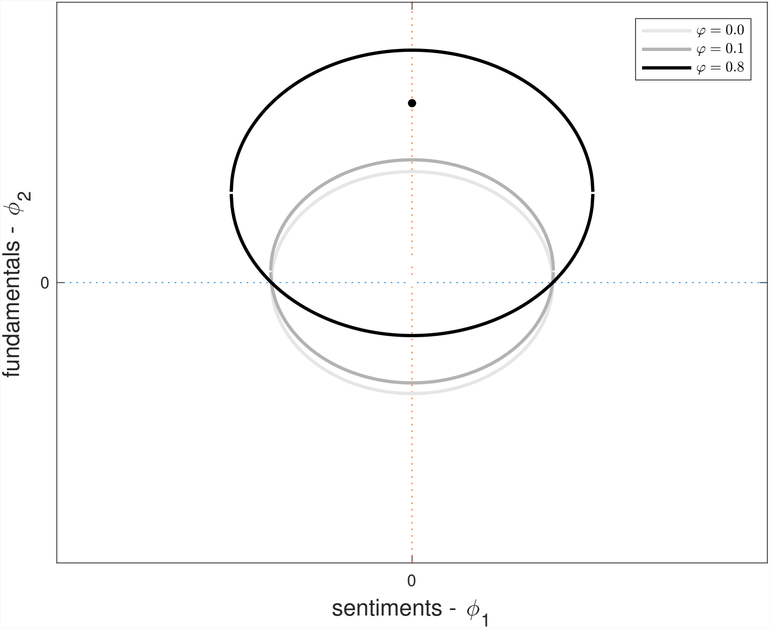

Observations of the Past

Some intuition

$$a_{i,t} = \alpha E_t^i[u_{i,t}] + \varphi E_t^i[\theta_t] \qquad I_{i,t} \supseteq \{a_{t-1}, a_{t-2}, ..., \theta_{t-1}, \theta_{t-2}, ...\}$$

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Result:

- any info equilibrium can be written

$$a_{i,t} = \alpha u_{i,t} + \varphi \theta_t + \varepsilon_{i,t} \leftarrow \text{includes sentiments}$$

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(Chahrour & Ulbricht, 2017)

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$$a_t = \varphi\theta_t + \varepsilon_t$$

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In words: if agents can infer past mistakes, they will not repeat them.

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In words: if agents can infer past mistakes, they will not repeat them.

(note: with endogenous states, this changes.)

Noisy Past Info

$$a_{i,t} = \alpha E^i_t[u_{i,t}] \qquad I_{i,t} \supseteq \{a_{t-1} + \eta_{t-1}, a_{t-2} + \eta_{t-2}, ...,\}$$

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$$a_t = \epsilon_t$$

- use $\epsilon_t \perp (a_{t-1} + \eta_{t-1})$ to bound autocorrelation of ϵ_t.

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- algebra, schur complement of covariance matrix, more algebra...

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- Upper bound on autocorrelation

$$\rho(\epsilon_t, \epsilon_{t-1}) \leq (1 + \sigma_a^2/\sigma_\eta^2)^{-\frac{1}{2}}$$

Noisy Past Info

Suppose

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- $a_t = \Delta GDP_t$ at quarterly frequency
- $\eta_t \iff$ initial vs. final revisions

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then bound implies

$$\rho(\epsilon_t, \epsilon_{t-1}) \leq 0.62$$

Conclusions

1. Insightful paper
2. Exciting research agenda
3. Lots of good work still to be done!