

Dynamic Market Choice

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Discussion: Chaojun Wang

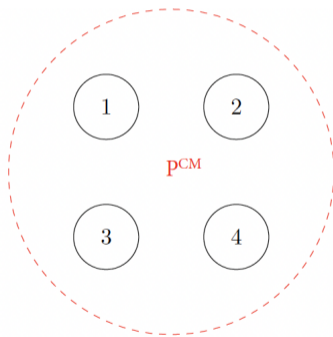
The Wharton School, University of Pennsylvania

AFA

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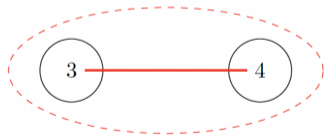
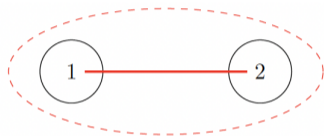
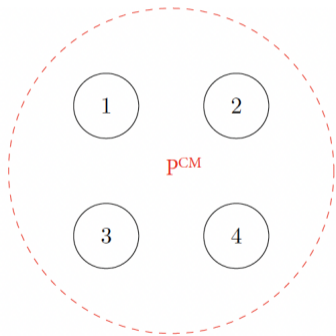
Summary: Equilibrium

$$P_1^{\text{PCM}}, P_2^{\text{PCM}}, \dots$$



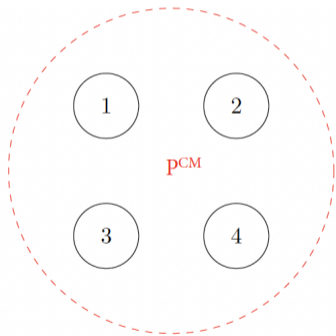
Summary: Equilibrium

$$P_1^{\text{PCM}}, P_2^{\text{PCM}}, \dots, P_5^{\text{PCM}}$$

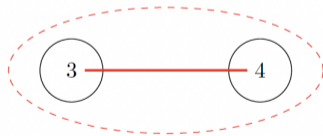
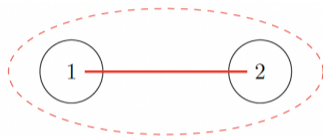


Summary: Equilibrium

$P_1^{\text{CM}}, P_2^{\text{CM}}, \dots, P_5^{\text{CM}}$



$t = 6, \dots, 8$



Suggestion 1: More precise intuition

Lemma 3 DM benefits more from informed price history than CM

Why? The intuition for this result should be in the intro.

Intuition “This is because the CM already boasts high liquidity, leaving less room for enhancement.”

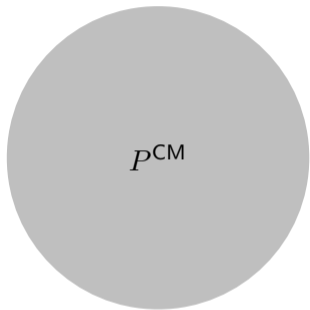
Taking its derivative over the public informativeness η , we have

$$\frac{d(\mathbb{E}[U_i^{CM}|\mathcal{H}] - \mathbb{E}[U_i^{DM}|\mathcal{H}])}{d\eta} = \frac{\sigma^2}{\alpha} \left(\frac{(1 - \bar{\rho} + \sigma^2) (1 + (I - 1)\bar{\rho} - I\eta)}{(I - 1) (1 + (I - 1)\bar{\rho} + \sigma^2 - I\eta)^3} - \frac{(1 - \rho_\ell + \sigma^2) (1 + \rho_\ell - 2\eta)}{(1 + \rho_\ell + \sigma^2 - 2\eta)^3} \right) < 0.$$

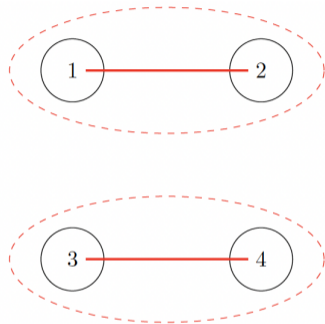
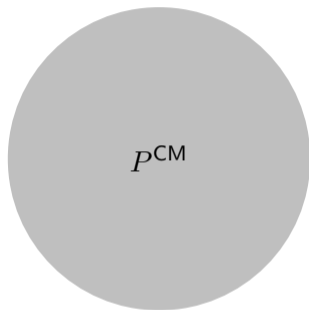
given that $\sigma \geq ((\frac{2(I-1)}{I})^{1/3} - 1)^{-1/2}$, $\bar{\rho} > \rho_\ell$, and $\eta \leq \frac{1+(I-1)\bar{\rho}}{I} \leq \frac{1+\rho_\ell}{2}$, for the joint correlation matrix

Proof of values to be positive semidefinite.

Suggestion 2: Continuum of investors



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Same mechanism still works

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Potential simplifications:

Conjecture 1 CM doesn't benefit from informed price history at all

DM still does

⇒ Simplifies Lemma 3

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Potential simplifications:

Conjecture 1 CM doesn't benefit from informed price history at all

DM still does

⇒ Simplifies Lemma 3

- Intuition**
- The current CM price aggregates up-to-date info from a continuum of investors
 - Law of large number is exact: Past prices offers no additional info
 - Price impact λ_{CM} does not depend on η

Suggestion 2: Continuum of investors

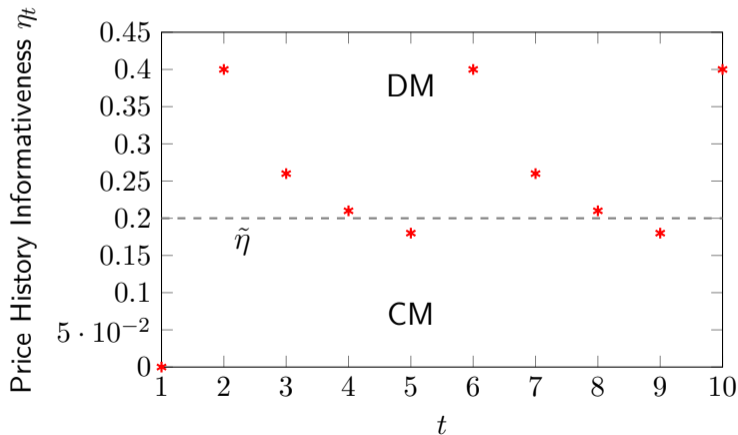
Conjecture 2 For DM, only the most recent price matters

\Rightarrow Equilibrium becomes periodic

Suggestion 2: Continuum of investors

Conjecture 2 For DM, only the most recent price matters

⇒ Equilibrium becomes periodic



Suggestion 3: Trading in CM is public good externality

Equilibrium Investors maximize gains from trade in the current period

Planner maximizes gains from trade aggregated across *all* periods

CM generates price discovery, a public good externality for future traders

Insufficient CM trading

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Planner solution threshold η^{planner}

Planner vs. equilibrium $\eta^{\text{planner}} > \tilde{\eta}$

Suggestion 4: Endogenous cycle in CM/DM market share

Empirics correlation between volatility/payoff sensitivity and CM/DM market share

Cycle in CM/DM market share

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Empirics correlation between volatility/payoff sensitivity and CM/DM market share

Cycle in CM/DM market share

- 2-stage Reg**
- Stage 1: Market share $_{a,t} = \text{observables}_{a,t}(\text{volatility, asset FE, etc.}) + \text{residual}_{a,t}$
 - Stage 2: residual $_{a,t} = \beta \times \text{residual}_{a,t-1}$
 - negative $\beta \implies$ endogenous cycle

Summary

Nice mechanism and rich results

Main suggestions:

- Sharpen the intuition for why DM benefits more from informed price history than CM
- Check if results hold and sharper with continuum of investors
- Trading in CM is public good externality
- Test for endogenous cycle in CM/DM market share