Discussion of "Market Microstructure Invariance: Theory and Empirical Test" by A.S.Kyle and A.A.Obizhaeva

Emiliano Catonini

ICEF

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- Invariances are an equilibrium outcome.

The crucial invariance

$$\widetilde{I}(t) = rac{P(t) \cdot \sigma(t) \cdot \widetilde{Q}(t)}{(\gamma_I(t))^{1/2}} = c_B \cdot \widetilde{i}(t)$$

• A strong invariance: if the distribution of $\tilde{i}(t)$ stays the same, the distribution of $\tilde{I}(t)$ stays the same for every variation in the structural parameters except c_B .

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- A strong invariance: if the distribution of $\tilde{i}(t)$ stays the same, the distribution of $\tilde{I}(t)$ stays the same for every variation in the structural parameters except c_B .
- A weaker invariance: the distribution of $\tilde{I}(t)$ follows proportionally the *condtional* distribution of $\tilde{i}(t)$ which can change over time without any change in the structural parameters

$$\widetilde{i}(t) = \tau^{1/2} \cdot \Sigma(t)^{-1/2} \cdot \sigma_F \cdot \left[B(t) - \overline{B}(t)\right] + \widetilde{Z}_I(t)$$

(the conditional matters because it gives the impact of over- or under-estimation of the asset on the distribuition of $\tilde{I}(t)$)

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- The ratio of informed traders is determined in such a way that market makers "acknowledge" that price impact; how does the market converge to this equilibrium value?
- Noise traders place the same bet distribution $\widetilde{Q}(t)$ of informed traders! This keeps all proportions, but doesn't it make them substantially informed?