Who Knows? Information Differences Between Trader Types

Albert J. Menkveld and Ion Lucas Saru

discussion by
Markus Baldauf
Chicago Booth, UBC

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Overview

Old question: How do informed traders trade?

- incentive to copy what uninformed traders do
- but: who is "informed"?

This paper: How do different trader types contribute to price discovery?

- breakdown of efficient price movements by:
  - trader type: principals and agents (clients)
  - order type: aggressive and passive
- key advantage:
  - better information than market participants about trader type

Data

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- proprietary trading data from Eurex
- Euro STOXX 50 futures
- account role: “client” or “principal”
- sample period: Jan 2010 – Dec 2018

Eurex account types

Account codes	Account type	Activity
A1-A9	Agent	Clients only
G2	Agent	Clients only
P1, P2	Proprietary	Own account
M1, M2	Market Maker	Own account

Analysis and result

Methodology

1. discretize trading day
   - preferred specification: hourly

2. decompose order flow by account type into
   - surprises (residual of VAR model) and
   - predictable component

3. decompose price into
   - efficient price (nonstationary) and pricing error (stationary) components
   - state space model (e.g., Hasbrouck, 1993)

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Main finding

- volatility of efficient price innovations $\approx 20bps$ (per hour?)
- share of variance of efficient price innovations explained by
  - client flow: 23%
  - principal flow: $\approx 0\%$
- additional results: auctions (open/close), hi-lo VIX days

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- At its core, this paper postulates

$$p = f(\text{order flow})$$

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Information asymmetries

- market makers update about value based on flow
- private information
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Constraints on market makers

- inventory holding cost
- limited risk bearing capacity

Imperfect competition

- market making yields profits

Mechanism – Why do client orders have more price impact?

Many competing explanations (with different welfare implications)

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Clients trade less efficiently

- optimal execution demands complex order splitting
- timing decision: trade when market is more liquid
- some fraction may be automated (e.g., participation algos)

Principal flow is complicated

- proprietary hedge funds
- market makers

Direct evidence of information

Step 1: Identify high information trading days (ex-post)

- anticipated news, scheduled announcements
- unanticipated news
- should have $|\Delta P| = |P^{\text{close}} - P^{\text{open}}| >> 0$

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Step 2: Are clients better than principals at guessing the direction?

Frequency distribution, high information days

		$\Delta P > 0$	$\Delta P < 0$
client	**buy**		
	sell		
principal	**buy**		
	sell		

- $H_0 : \frac{Pr(correct \mid client)}{Pr(correct \mid principal)} = 1$
- How often are they on the right side? Diagonals vs. off-diagonals
  - high odds ratio of clients $\implies$ information channel more likely

Direct evidence of information (continued)

Step 3: Identify low information trading days (ex-post)

- days with large amount of liquidity trade – roll dates, rebalancing trades (dividends), etc.

- if clients get it right more often on low-info days, non-info reasons more likely

Conclusion

- Important questions:
  - Who contributes information to prices?
  - And how do they do it?

- This paper makes good progress to answer them.

- Wish list item #1: tell us more about the mechanism

Good luck with the paper!