



”Doctor, is that order flow really toxic?”

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Basic idea of the paper 1/2

- One market maker with no insider information
- Counterparties / investors / traders may have private information
- Volume Synchronised Probability of Informed Trading (VPIN)
 - Testing the measure
- Agent based simulations
 - Passive market makers
 - Active investors/traders
 - Uninformed behave randomly, informed abuse information
 - It would be interesting to read a few comments on how rational these strategies are, esp. market maker.

Basic idea of the paper 2/2

- Testing with different sets of market participants
- Splitting and high-frequency trading
- A lot of customers "on the same side" => more likely that "toxic" orders exist.
- Conclusion: VPIN is useful yet not completely reliable
 - A common characteristic of nearly all indicators! Do any perfect indicators of complex phenomena exist?
 - A pragmatic practitioner normally uses a handful of fundamentally different indicators.
- The approach is pragmatic and analytically sound.

Questions and ideas (1/3)

- Why is "high frequency trading" exogenous?
 - Splitting and high frequency could be a choice by a rational agent? Who would decide to split? The one with insider information?
- Could the size distribution of investors vary stochastically in each block of 100 replications?
 - Not just big and small fishes? Medium size investors etc
 - Three gigantic traders with/without insider information?
- The data has been at least partly calibrated, but according to which market?
 - Reference to "Anonymous"...

Questions and ideas (2/3)

- The maths and the intuition of the formula for VPIN could be explained more carefully
 - Why expected values?
 - Certainly explained in Easley (2010), but could be re-explained here in more detail
- Multiple market makers and competition?
 - Competing market makers trying to detect informed trading and reacting accordingly – market between MMs. Detection efforts by the two MMs strategic complements???
 - Own customers' behaviour as a source of insider information? Other market makers indirectly affected?
 - Competition mentioned in the intro and on the last page.

Questions and ideas (3/3)

- Varying degrees of good and bad news?
 - Especially very bad news, panic reactions of informed traders...
- Insider information spreads among traders?
 - "Toxicity" of order flow worsens over time
- Different market maker policies?
 - In some / many markets the bid-ask spread is regulated.