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Discussions of

Retail Order Flow Segmentation,

by Corey GARRIOTT and Adrian WALTON and of

Smart Settlement,

by Marius A. ZOICAN and Mariana KHAPKO

Charles-Albert Lehalle

Capital Fund Management, Paris and Imperial College, London

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Outline

This paper is based on the TAQ database (April 2012 to July 2012 on NYSE and Arca) during the introduction of the Retail Liquidity Program. This is an example of **flow segmentation**. Typically

- market makers usually suffer from adverse selection, and hence ask for a premium (the market impact, or the bid-ask spread) as a compensation;
- the more mixed the flow they have to deal with, the more difficult for them to segment the "toxic" from the "uninformed" flows [Kyle, 1985];
- if market makers have access to known counterparts, they may be able to adjust the premium they ask for.
- Moreover, if the market is risk averse and traders are not (or if they do not share the same preferences [Çetin and Danilova, 2015]), **segmentation could be beneficial to all participants**.

Since the crisis, and with some specific market manipulations (like the Libor scandal, 2012), regulators (and investors) do not like **information asymmetry** [‡]. On the principle, it increases transaction costs [Harris, 2015]. Multilateral trading facilities reduced information asymmetry, but surprisingly **Dark Pools appeared at the demand of investors** (fearing HFT's superior knowledge of modern market microstructure) [Lehalle et al., 2013].

[‡] **Disclaimer**: views expressed in this discussion are my own.

The Retail Liquidity Program

Introduced by NYSE-Euronext in the US (August 2012), it has never been accepted by the French regulator[‡] .
Arguments were clearly around **information asymmetry** and the introduction of a new **Dark Pool** .

Note that in Europe Dark Pools are more (and better) regulated than in the US, with a clear post-trade transparency. **In the US it is difficult to have information about dark trades**, but in this case RLP orders can be half-tick; it allowed authors to identify them.

Authors raise four questions:

1. Is the RLP order flow **less informed** than the non-RLP order flow?
2. Does segmentation **improve the informativeness** of order flow?
3. Does the participation in RLP **affect liquidity** ?
4. Does the participation in RLP **affect price efficiency** ?

They use trades on 35 stocks and a control sample (stratified by market capitalization).

Flow Information Estimation using structural VAR

Authors link

- the short term (5 minutes) returns
- the net order flows, potentially split in
- RLP and Lit,

using a collection of structural VAR models.

It allows to estimate the **information shares** [Hasbrouck, 1995] by the norm of the influence of one flow over the sum of the norm of all considered flows.

Note I have been recently aware of this paper *Price discovery measures and High-frequency Data*, by Christian Nguenang (2017), you should have a look at it (p3) "*the Information Share [of Hasbrouck] has an identification problem and is only able to produce bounds*."

Answers to questions 1 and 2

1. The RLP Flow seems **less informed**, making it desirable for market makers,
2. The segmentation seems to increase the explanatory power of the order flow. ← **I have some doubts**

Liquidity and Price Efficiency using diff-in-diff

Authors use standard static measures

- **Liquidity** : the relative bid-ask spread and the effective spread,
- **Efficiency** : the 5 seconds price impact and the 5 seconds returns autocorrelations.

Table 4 to 7 exhibit slightly higher liquidity and slightly greater price efficiency. Figure 4 seems to convince authors these slight differences are robust.

My comments: If I correctly understood, **the mid-tick trades were not specifically processed**.

- The effective Bid-Ask spread is hence expected to decrease mechanically?
- what about the auto correlations between different types of trades?

I would suggest to have a look at [Taranto et al., 2016] to take ideas about how to exploit the **standard measures** **conditioned by the nature of the previous trades** .

Conclusion on “Retail Order Flow Segmentation”

This is an interesting paper, using smartly a detailed database to ask topical questions

- The use of Hasbrouck’s Information Share should be double checked,
- but the **less informed nature of retail flow** can be easily accepted.
- The added value of segmentation seems to me a strong conclusion based only on the comparison of two models with different number of parameters.
- I would try to condition liquidity and efficiency measures by the nature of the flow,
- For bid-ask and effective spread, it would answer to the question **who profits from the slight improvements?**
- For price impact and auto correlation it would for instance say **if the retail flow is more autocorrelated than the non-retail**. Somehow it will be related to redo the VAR model at 5 seconds instead of 5 minutes, or at a trade-by-trade frequency.

Outline

Smart Settlement (Marius A. ZOICAN and Mariana KHAPKO)

Choosing Time-toSettlement Dynamically

Authors propose a theoretical model of **smart settlement**, claiming that blockchain based protocols could allow to choose the time-to-settlement. The mechanisms in place in the model are

- participants can choose the time-to-settlement
- **short time** implies no default, but a price made by the intermediary (paying an adverse selection premium)
- **long time** exposes to default, but take the chance to obtain a better price against a “natural counterpart”.
- Two intermediaries (fast and slow) are available.

It raises the question of intermediation, inventory and risk taking:

- regulator would like to settle as fast as possible, to **avoid default**
- but they **demand intermediaries take no risk**, i.e. as low inventory as possible.

does it impair liquidity search?

$\Rightarrow$ in which markets? in multilateral trading (CLOB) it is difficult to imagine such a situation. Probably more for fixed income RFQ-based markets [Fermanian et al., 2015], where trading is bilateral and liquidity has to be chased.

Theoretical Results

Authors derives the equations to obtain some interesting results, like

- there is an **optimal time-to-settlement**,
- it can be zero (high default rate δ);
- or delayed if the default rate is low enough. In such a case it is $1/(2\delta) - (\theta_i - 1)/(2\lambda)$, where θ_i is the private value and λ the search rate.
- welfare result: **fixed time-to-settlement is better** than flexible time-to-settlement.

For me it is always difficult to find arguments to go beyond the “nice model” effect: in practice, who are we talking about?

Trying to Go Back to Reality

The idea of the model is very interesting especially the intrication of

- investors fear default probability
- but they would like to give time to intermediary to find good counterparts
- intermediaries adjust their prices to attract investors.

Would be very nice to see effects like

- intermediaries' profit change their probability to default,
- counterparts to chase are not outside of the game, they have to be attracted too.

$\Rightarrow$ Some **important loops are not closed**, I strongly suggest to include them.

This could be related to **riskless principal** intermediaries [Harris, 2015] and use **Mean Field Games** [Lasry and Lions, 2007] to model trading decisions in which the investor could change his behaviour during the day [Cardaliaguet and Lehalle, 2016]: more opportunistic at the start, and less at the end.

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