Anticipatory Trading Against Distressed Mega Hedge Funds

by Vikas Agarwal, George O. Aragon, Vikram Nanda and Kelsey Wei

Discussant: Jay Kahn
Office of Financial Research
U.S. Department of the Treasury

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OFFICE OF FINANCIAL RESEARCH

Q: Are distressed hedge funds front-run by other traders?

A **very** important question, especially recently.

A: Yes! Moreover, effects are **large**:

- For every 1% distressed MHF are expected to sell, non-distressed MHF sell 1.79%.
- Stocks excpected to be sold have -1.66% lower returns today.
- Frontrunning exposure decreases distresst MHF returns.

My comments are concerned with how the authors detect this frontrunning in the data.

Detecting frontrunning is a complex problem!

The current approach:

1. Forecast trades of hedge funds.

   $$\text{HFTrades}_{i,j,t+1} \sim a_{i,t} + b_1 \times \text{Own}_{i,j,t} + X'_{j,t} b_2$$

2. Classify some funds as distressed.

   Ω_t: Returns < 0 and (or?) in bottom quartile.

3. Aggregate fitted forecasts for distressed MHF.

   $$\text{PTrade}_{j,t} = \sum_{i \in \Omega_t} a_{i,t} + b_1 \times \text{Owns}_{i,j,t} + X'_{j,t} b_2$$

4. Regress outcomes on aggregated forecasts.

   $$\text{Trades}_{l,j,t} \sim \alpha_{l,t} + \beta_1 \times \text{PTrade}_{l,t} + X'_{l,t} \beta_2$$

Under what assumptions should this work?

Variable	$\text{HFTrades}_{i,j,t+1}$	$\text{Trades}_{i,j,t}$
$\text{Owns}_{i,j,t}$	-0.0372^{***}	
	(12.45)	
$\text{PTrade}_{i,j,t}$		0.002^{**}
		(2.58)
$\text{Trades}_{i,j,t-1}$	-0.020^{***}	0.007
	(4.48)	(0.47)
R^2	0.023	0.018

Detecting frontrunning is a complex problem!

Why is this problem hard?

$$\text{Trades}_{i,j,t} = \alpha + \beta_1 \times \underbrace{F(Y_{j,t})}_{\substack{\text{Forecast sales}\\\text{(Unobserved)}}} + X'_{j,t}\beta_2 + \epsilon_{i,j,t}$$

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so long as $\mathrm{E}[\epsilon_{i,j,t} Y_{j,t}] = 0$.

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In other words, **we need an instrument.**

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Choosing an instrument

$$\text{HFTrade}^{D}_{j,t+1} = \sum_{i \text{ distressed}} \text{HFTrade}^{D}_{i,j,t+1}$$

1. **Current approach:** Instrument for **sales**.
   - Hard to think of features **known at** t driving which stocks are sold $t+1$ that **don't matter** at t.
2. **Alternative:** Instrument for **distress**.
   - Ideally, distress *not associated* with MHF stock picking ability.
     - **Broadest option:** MHF returns *excluding* holdings of the particular stock, or excluding equities generally.
     - **More robust:** Distress due to **counterparty exposure.**
       Ex: Aragon and Strahan (2012): Lehman bankruptcy; Kruttli, Monin and Watugala (2019): Deutsche Bank liquidity shock

How should we think about excess returns?

	Return	t-stat
α_t	-0.017^{***}	-2.90
$(\text{MKT} - \text{RF})_t$	1.02^{***}	13.66
SMB_t	0.99^{***}	7.61
HML_t	-0.07	-0.76
MOM_t	-0.29^{***}	-4.03

Several things to think about:

- R^2 on prediting trades $\rightarrow$ Sharpe ratio understated.
- Also useful for thinking about frontrunning incentives:
  1. Are frontrunners getting out of the way or exploiting?
  2. Why don't distressed funds react sooner?
  - Could be a small

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Conclusion:

This paper asks an important and interesting question!

The range of data the authors are bringing to bear is great!

The econometric problem of pinning down frontrunning is **hard**:

- I think tackling this problem head-on could add a lot to the paper.
- Taking an IV-like approach seems like an appropriate choice.