PRICE REVELATION FROM INSIDER TRADING: EVIDENCE FROM HACKED EARNINGS NEWS BY PAT AKEY, VINCENT GREGOIRE, AND CHARLES MARTINEAU

Discussion by Emiliano S. Pagnotta

Imperial College London

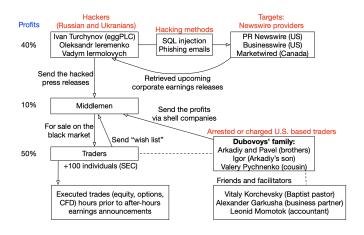
AFA, January 5, 2019

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 - Information precision (Grossman Stiglitz, 1980)
 - Uncertain horizon (Back and Baruch, 2004)
 - Market Makers event uncertainty (Easley O'Hara, 1992)
 - Timing ability (Collin-Dufresne Fos 2016)
 - Competition risk (Holden and Subrahmanyan, 1992)
 - Legal risk (DeMarzo, Fishman, Hagerty, 1998)
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- Theory: Canonical representation of information transmission is in Kyle (1985): insiders face price impact risk and carefully split trades over time
 - Information precision (Grossman Stiglitz, 1980) HIGH
 - Uncertain horizon (Back and Baruch, 2004) NO
 - Market makers' event uncertainty (Easley O'Hara, 1992) LOW (high PIN prior)
 - Timing ability (Collin-Dufresne Fos 2016) LOW
 - Competition risk (Holden and Subrahmanyan, 1992) HIGH
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RESULTS: ASYMMETRIC INFORMATION PROXIES

Panel A: Afternoon (12 p.m. to 4 p.m.)											
	Volatility	Log(volume)	Turnover	Amihud	OI	VPIN	Quoted spread	Effective spread	Realized spread	Price impact	Kyle's λ
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
$1_{[\mathrm{Hacked}]}$	0.0421***	0.0329**	0.0459***	0.0108	0.0086	0.0020	0.0162*		* 0.0449**		0.0140
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
- N	43,991	43,991	43,991	43,991	43,991	43,991	43,991	43,991	43,991	43,991	43,991
R^2	0.180	0.031	0.014	0.121	0.012	0.043	0.132	0.159	0.034	0.024	0.062
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year-Quarter F.E.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm F.E.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Panel B: Morning (9:30 a.m. to 12 p.m.)											
	Volatility	Log(volume)	Turnover	Amihud	OI	VPIN	Quoted	Effective	Realized	Price	Kyle's λ
							spread	spread	spread	impact	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

-0.0092

(0.01)

43,991

0.010

Y

Y

-0.0047

(0.01)

43,991

0.033

0.0185*

(0.01)

43,991

0.108

Y

0.0137

(0.01)

43,991

0.072

Y

Y

0.0221

(0.01)

43,991

0.029

Y

Y

-0.0024

(0.02)

43,991

0.018

Y

0.0146

(0.01)

43,991

0.035

Y

Y

Y

 $\mathbf{1}_{[Hacked]}$

Controls

Firm F.E.

Year-Quarter F.E.

N = 43,991

 $R^2 = 0.044$

-0.0140

(0.01)

Y

Y

-0.0190

(0.02)

43,991

0.028

Y

Y

Y

-0.0130

(0.01)

43,991

0.009

Y

Y

Y

0.0171

(0.01)

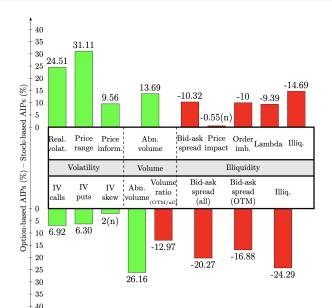
43,991

0.102

Y

Y

COMMENT: RELATION TO KACPERCZYK PAGNOTTA (KP 2019)



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- Similar

- Abnormally high volume
- Abnormally high volatility
- No Price Impact effect
- Many illiquidity measures fail to increase

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- Many illiquidity measures display a decrease (also for 13D traders, Collin-Dufresne and Fos, 2015)
- Quoted Spreads increase for hackers, decrease in KP2019

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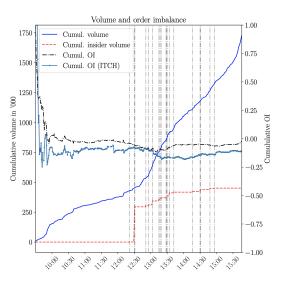
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Likely Mechanisms

- Illiquidity measures:
 - Hackers' short horizon reduce ability to choose days of high liquidity
 - Quoted Spreads:
 - Result consistent with classic Glosten-Milgrom setting
 - Easley and O'Hara 1992: high α can lead to early resolution of uncertainty and rapid convergence to zero spread. Could point at lack of common knowledge on asset value support

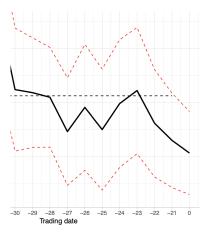
COMMENT: ABSOLUTE ORDER IMBALANCE

FIGURE: Edward Life Sciences (2013/04/23)



COMMENT: ABSOLUTE ORDER IMBALANCE

- Lack of spike in AOI is surprising in a Glosten-Milgrom world
- Are limit orders widely used? Likely if HFTs are leaning with the wind. But the spreads are increasing. Can these be reconciled?
- Consistent with long-term daily average effect from SEC insider trading investigations (Kacperczyk and Pagnotta, 2019)



AOI measured designed around dealer-driven markets

Takeaway: ed around de

Less helpful for electronic open L.O.B. markets (Easley O'Hara, 2012)

FIGURE: Trade Universe and Samples

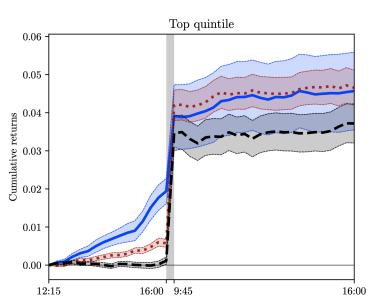


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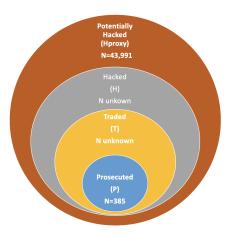
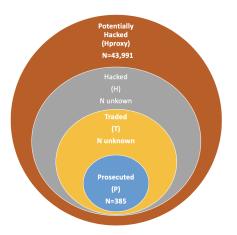
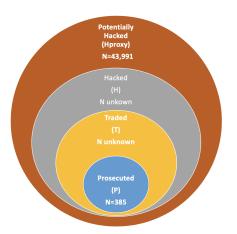


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- Prosecution bias is |ATE(P) - ATE(T)|

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- Prosecution bias is |ATE(P) ATE(T)|
- Reported bias |ATE(P) ATE(Hproxy)|. Arguably an **upper bound**

COMMENT: LEGAL RISK

- Both Hackers and insiders in KP2019 face Legal Risk
- Arguably to different degree depending on locations, which can influence aggressiveness
- Can you split events across U.S. based traders and those who are located abroad?
- Looking at volume in option markets could provide perspective

CONCLUDING REMARKS

- Smart identification design to study information transmission into prices over intraday horizons
- Results reinforce the notion that we can still learn a fair bit about the relation between asymmetric information theories and what market participants do
- Microstructure is not dead yet!