

# Dark Pool Effects on Price Discovery and Economic Efficiency

Xiaoqi Xu, UC Irvine

Discussion by Chaojun Wang  
The Wharton School, University of Pennsylvania

AFBC Annual Conference  
December 2020

## Main Mechanism

Asymmetry between buying on a good fundamental and selling on a bad one:

- ▶ project type = H: informed trader buys  $\implies$  stock price  $\uparrow \implies$  firm manager learns that project is profitable  $\implies$  expands investment  $\implies$  higher firm value

## Main Mechanism

Asymmetry between buying on a good fundamental and selling on a bad one:

- ▶ project type = H: informed trader buys  $\implies$  stock price  $\uparrow \implies$  firm manager learns that project is profitable  $\implies$  expands investment  $\implies$  higher firm value
- ▶ project type = L: informed trader sells  $\implies$  stock price  $\downarrow \implies$  firm manager learns that project is not profitable  $\implies$  disinvests  $\implies$  higher firm value

# Main Mechanism

Asymmetry between buying on a good fundamental and selling on a bad one:

- ▶ project type = H: informed trader buys  $\implies$  stock price  $\uparrow \implies$  firm manager learns that project is profitable  $\implies$  expands investment  $\implies$  higher firm value
- ▶ project type = L: informed trader sells  $\implies$  stock price  $\downarrow \implies$  firm manager learns that project is not profitable  $\implies$  disinvests  $\implies$  higher firm value
- ▶ informed trade sells in the dark pool instead

## Difference with Edmans, Goldstein and Jiang (EGJ, AER 2015)

- ▶ EGJ: centralized exchange only, key parameter  $\kappa$  exogenous transaction cost for the informed
  - ⇒ for some range of  $\kappa$ , informed trader buys but doesn't sell
- ▶ This paper: centralized exchange + dark pool,  $\kappa$  = value of trading in the dark pool, key parameter  $\alpha$  liquidity measure of the dark pool
  - ⇒ for some range of  $\alpha$  informed trader buys on the centralized exchange but sells in the dark pool

# Suggestions

Possible ways to strengthen marginal contribution relative to EGJ (2005):

- ▶ Trading game
- ▶ Managerial learning
- ▶ Dark pool trading predicts firm profitability?

## Trading game

- ▶ Continuum of informed investors? same price between exchange and dark pool, execution risk on the dark pool but not on the exchange  
     $\implies$  everyone trades, buys and sells, on the exchange
- ▶ This paper: One informed investor  $\implies$  price impact on the exchange
- ▶ Possible extensions: (1) multiple informed traders, (2) one big informed trader, with many small ones (competitive fringe)

# Managerial Learning

- ▶ This paper: manager learns from the exchange only
- ▶ Manager may also want to learn from trading activities in the dark pool
- ▶ Under the asymmetric equilibrium, trading in dark pool more likely driven by negatively informed investor
- ▶ Negatively informed investor cannot hide by trading in the dark pool

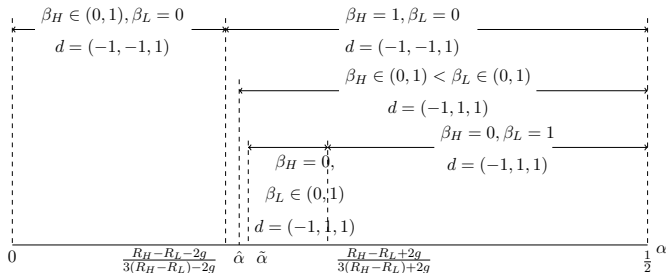


Figure 6: w/. Real Effects Selecting venues



## Dark pool trading predicts firm profitability?

Model: dark pool trading  $\uparrow$  predicts firm profitability  $\downarrow$

## General/Offline Suggestions

- ▶ Highlight one main message
- ▶ Better ways to deal with multiple equilibria
- ▶ Paper organization...

# Conclusion

- ▶ Rich implications
- ▶ Robustness of main result
- ▶ External validity