Discussion of “Detecting Informed Trade by Corporate Insiders” by Blonien, Crane, and Crotty

Vincent Bogousslavsky

Boston College

MFA 2026 Annual Meeting

Insider trading

- A large literature examines the profitability of corporate insiders' trades
  - Insider trades predict future returns
  - Purchases earn abnormal returns, sales don't
  - Return predictability strengthened within subsets of trades/insiders (e.g., routine vs non-routine transactions, short vs long horizon insiders, etc.)
- This paper uses a mixture model to infer insiders' probability of informed trade and profitability
  - Takes into account estimation noise
  - Can classify all insiders
  - Mixture models used for funds (Harvey and Liu, 2018), analysts (Crane and Crotty, 2020), members of Congress (Blonien, Crane, and Crotty, 2025)

Framework

- Insider i is informed with prior probability π
- Estimate $\tilde{\pi}_i = \mathrm{Prob}(i \text{ is informed}|\text{past trade returns})$
  - Average return on past trades: $\bar{r}_i = \alpha_i \times 1_{\text{informed}} + e_i$
  - $\alpha_i \sim \text{Exp}(1/\mu)$
  - $e_i \sim \text{N}(0, s_i^2)$
  - $s_i = \frac{\bar{\sigma}_i}{\sqrt{\text{nb\_trades}_i}}$
- *Main insight:* improve $\tilde{\pi}_i$ estimation by optimally incorporating an estimate of s_i^2, not just $\bar{r}_i$
- Setup allows for different types of insiders: uninformed, buy-informed, sell-informed, and buy/sell-informed
  - μ is assumed to be the same for purchases and sales
  - Uninformed: $\alpha = 0$ (no transaction costs)
- Can estimate the parameters using expanding windows

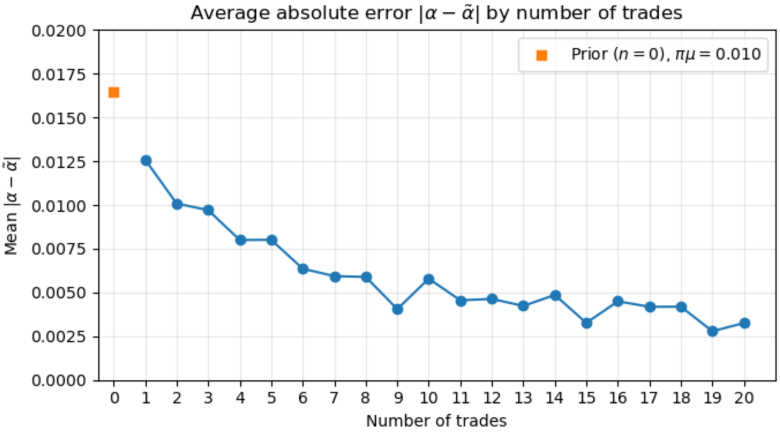
Nice and intuitive framework!

Intuition from a simple simulation

- 10,000 insiders, $\pi = 20\%$, $\mu = 5\% \Rightarrow$ prior for α_i is 1%
- Median (mean) nb of buys is 2 (7); highly skewed
- Interested in average $|\alpha_i - \tilde{\alpha}_i|$

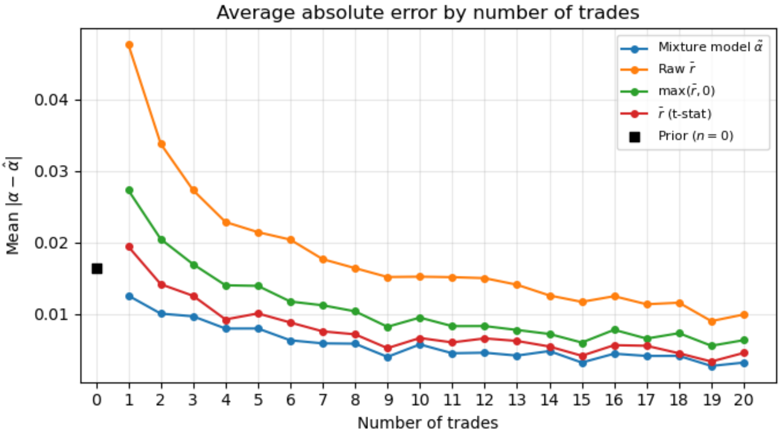
Intuition from a simple simulation

- 10,000 insiders, $\pi = 20\%$, $\mu = 5\% \Rightarrow$ prior for α_i is 1%
- Median (mean) nb of buys is 2 (7); highly skewed
- Interested in average $|\alpha_i - \tilde{\alpha}_i|$



Intuition from a simple simulation (comparison)

- 10,000 insiders, $\pi = 20\%$, $\mu = 5\% \Rightarrow$ prior for α_i is 1%
- Median (mean) nb of buys is 2 (7); highly skewed
- Interested in average $|\alpha_i - \tilde{\alpha}_i|$



Intuition from a simple simulation (classification)

- Same setup
- Interested in probability of classifying informed vs true state (pick top quintile of insiders based on estimated alpha)

Intuition from a simple simulation (classification)

- Same setup
- Interested in probability of classifying informed vs true state (pick top quintile of insiders based on estimated alpha)

Mixture model	**Uninformed**	**Informed**
Classify: Uninformed	6,954	1,046
Classify: Informed	998	1,002

Intuition from a simple simulation (classification)

- Same setup
- Interested in probability of classifying informed vs true state (pick top quintile of insiders based on estimated alpha)

Mixture model	**Uninformed**	**Informed**
Classify: Uninformed	6,954	1,046
Classify: Informed	998	1,002

But not that much better than the simplest alternative:

Raw $\bar{r}$	**Uninformed**	**Informed**
Classify: Uninformed	6,876	1,124
Classify: Informed	1,076	924

- And average α about the same within classified as informed groups (3.78% vs 3.65%)!
- Worth explaining since empirical results rely on quintiles
    - Why does the methodology work better in the data?

Strategic trading

Contrast to analysts/funds settings studied previously: insiders have stronger incentives to be strategic

- Legal risk internalized by insiders (Kacperczyk and Pagnotta, 2024; Carré, Collin-Dufresne, and Gabriel, 2022)
- Informed strategic insider might submit uninformed trades: $\tilde{\pi}_i$ underestimated
- Is trade frequency related to the probability of being informed?
- Trade size could also play a role
- Both trade size and trade frequency are negatively related to returns (Cziraki and Gider, 2021)
    - And the median insider earns $464/year

Insider characteristics

An insider type might change over time (e.g., more/less access to information, etc.)

- Adding more trades may introduce staleness
- Relation between $\tilde{\pi}_i$ and insider characteristics?

Benchmarking the results

- In my opinion, a crucial part of the paper is the comparison to existing measures
  - "The proof is in the pudding"
- But I found this part difficult to follow
  - Does the new measure do "better or worse" than other methodologies (nonroutine, etc.)?
  - What if we want to pick one measure?
- Other measures survive the inclusion of the quintile indicators (Table IA.3)
- Value-weighted results are (much) weaker
  - What about other measures?
  - Does the equal-weighted sample exclude micro caps?

Miscellaneous comments

- The GARCH(1,1) gives an ex ante measure of volatility, which is compared to a realized return
  - Why the mismatch?
- More descriptive statistics on insiders and number of trades would be useful

In summary

- Elegant methodology to study repeat performance
  - Compared to other settings (funds, analysts), strategic considerations play a more important role here
- The measure contains new information, but it is not entirely clear to me how much it improves/subsumes existing measures
- Good luck!