Discussion
Securities Markets Where Some Investors Receive Information About Cash Flow Betas

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This Paper

- This paper studies an environment in which investors receive private signals about
  - cash flows
  - **betas**
- Explores implications for
  - price informativeness
  - price impact/liquidity
  - expected returns/return volatility
  - welfare
- Also endogenous information acquisition
  - Equilibrium mix of informed about cash flows vs. betas
- Simple and stylized environment
  - but also quite rich and involved
  - I cannot make justice to the paper in 6 minutes!

Outline

Environment

- Many assets $j = 1, \ldots, N$
  - Payoffs: $v_j = \beta_j \theta + \epsilon_j$ (1-factor structure)
  - Common component: $\theta \sim N\left(\bar{\theta}, \sigma_\theta^2\right)$

$$\beta_j = \begin{cases} \overline{\beta} - \Delta_\beta, & Pr = 1/2 \\ \overline{\beta} + \Delta_\beta, & Pr = 1/2 \end{cases} \quad \text{and} \quad \epsilon_j = \begin{cases} -\Delta_\varepsilon, & Pr = 1/2 \\ \Delta_\varepsilon, & Pr = 1/2 \end{cases}$$

- Risk-neutral traders $\Rightarrow$ bounded demands $\in [-1, 1]$
  - Share χ_ϵ: ϵ-informed
  - Share χ_β: β-informed
- Noise traders (inelastic)
  - $z \sim$ Uniform $\in [-1, 1]$
- Risk-averse *competitive* market maker
  - One per market $\Rightarrow$ Single asset model

$$p = \mathbb{E}[v \mid \text{order flow}] + \frac{\gamma}{2} X \operatorname{Var}(v \mid \text{order flow})$$

  - Order flow: $X = \chi_\epsilon y_\epsilon + \chi_\beta y_\beta + z$

Results

- ▶ Under some assumptions, an equilibrium exists
  - ▶ Investors buy (sell) with high (low) signal over β or ϵ
  - ▶ Closed form solution
  - ▶ Equilibrium price has several regions, given the bounded nature of the uncertainty
- ▶ Price informativeness
  - ▶ Subtle comparative statics
  - ▶ Interesting crowding out effects between different types of information – non-obvious
  - ▶ Note: I prefer $Var\left(P|v\right)$, since $Var\left(v|P\right)$ includes the prior (see my paper on identifying price informativeness)

Results

▶ Price Impact: $\lambda(x) \equiv \frac{\partial p}{\partial X}$, in equilibrium $\lambda(X) = \frac{\gamma}{2} \text{Var}(v \mid X)$

    ▶ Constant in Kyle 85, but not here!
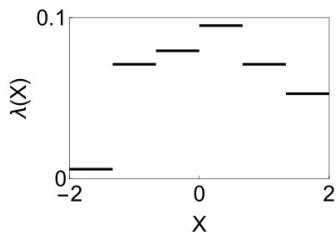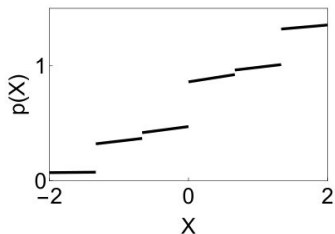
    ▶ Market is very liquid when $|X|$ is large

        ▶ Market market is certain of good/bad news when $|X|$ is large

    ▶ Matches evidence on concave price impact measures

Comments/Thoughts

1. How should we think about β_j more generally?
   - ▶ Could it be any second payoff component?
   - ▶ It crucially enters binary in this model
   - ▶ In a sense θ and β_j (and ϵ_j) are modeled very asymmetrically
   - ▶ It is a bit hard to separate what comes from the binary nature of β relative to

2. Is there a difference between alpha, beta, and the error?
   - ▶ α_j, β_j, and ϵ_j?
   $$v_j = \alpha_j + \beta_j \theta + \epsilon_j$$

3. Potential simplifications
   - ▶ What if the paper starts with a risk-neutral market maker?
     - ▶ Easier benchmark
   - ▶ What if the paper starts with $\Delta_\varepsilon = 0$?

4. It would be nice to nest linear-gaussian setups (GS, Kyle, etc.)
   - ▶ There may be a way to do it

5. Endogenous information acquisition
   - ▶ Assumption of specialized learning
   - ▶ Lack of interaction (two assets may be enough)