

A Long and a Short Leg Make For a Wobbly Equilibrium by Nicolae Gârleanu, Stavros Panageas, and Geoffrey Zheng

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SFS Cavalcade, May 2022

Introduction

Summary:

- ▶ What drives movements in short interest/volume?
- ▶ Structural asset pricing model with multiple equilibria.
 - Fees from short selling divided equally among long positions.
 - Region featuring jumps between high-shorting and low-shorting equilibrium.

Evaluation:

- ▶ Extremely elegant model generating intuitive mechanism.
- ▶ My suggestion: link to institutional features to establish economic relevance.
- ▶ Comments: (i) magnitudes, (ii) specials, (iii) price dynamics, (iv) passive lenders.

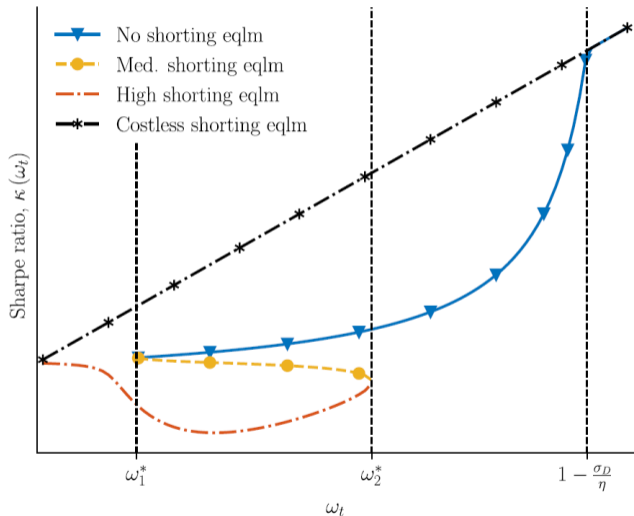
Mechanisms

- ▶ Numerous mechanisms at work.
- ▶ **Irrational Investors:** overoptimistic, increase price and lower return.
 - Incentivizes rational investors to short.
- ▶ **Shorting Costs:** fees increase discontinuously when crossing from long to short.
 - Reduces short positions, increasing prices and lowering returns.
- ▶ **Limits to Arbitrage:** if prices rise, short sellers lose net worth, may be forced to reduce positions.
 - Not present in this paper.
- ▶ **Fee Subsidy Effect:** main mechanism of this paper.

Fee Subsidy Effect

- ▶ Imagine imposing a subsidy on long stock positions.
 - Would push prices up, reducing returns.
 - Lower (more negative) returns increases short demand.
- ▶ Here, subsidy comes from fees from short sellers, increasing in short volume.
 - Allows for multiple equilibria.
 - Low shorting equilibrium: subsidy is small, price is low.
 - High shorting equilibrium: subsidy is large, price is high.
- ▶ But subsidy is paid by shorts! Shouldn't that undo the effect?
 - No, because marginal cost of shorting is constant.
 - Instead, *average benefit* of lending shares is increasing in volume.
 - Conjecture: mechanism would not work with fixed short volume, adjustment on fees.

Graphical Intuition



Comment 1: Magnitudes

- ▶ Mechanism is elegant and intuitive. Is it strong enough to have important effects?
- ▶ Reed (Ann. Rev. Fin. Econ., 2013): fees in the form of spread between interest rate and “rebate rate” on collateral.
 - *For highly liquid stocks...this rate is generally 5–25 bps below the federal funds rate for each day. The spread generally increases to ~35 bps when the equity lending market has less available supply.*
- ▶ Beneish et al (2015): only around 20% of shares readily available for lending.
- ▶ Back of the envelope calculation: increase from no shorting to 20% shorting, assuming fee of 25bps, 75% of which goes to the lender (Reed, 2013).
 - Average share receives **4bp** in additional fees.
- ▶ Is this enough to drive large effects?
 - Or are liquid stocks the wrong place to look?

Comment 2: Specials

- ▶ While most stocks have small spread, stocks “on special” can have much higher spreads.
 - Reed: *The majority of loans in the equity lending market are made in widely held stocks that are cheap to borrow, but several expensive loans known as stock specials also occur...Only a few stocks are on special each day; a one-year sample showed approximately 7% of its securities on special. The specials are not necessarily limited to small stocks.*
 - Beneish et al (2015): stock specials associated with **limited supply**.
- ▶ Very promising mechanism for multiple equilibria, but may pose challenges.
- ▶ Imagine model where fees are flat and low until supply is exhausted, then fee schedule becomes vertical (“backward L” supply).
 - In flat region, fees might be too low to have big effect.
 - But in vertical region, all adjustment through fee price, not through short volume.
 - Would mechanism still go through?

Comment 3: Transitions

- ▶ What should we expect transitions between different equilibria to look like.
- ▶ If I am understanding correctly, move from high-shorting to low-shorting equilibria should correspond to **decline** in price.
 - Shorts endogenously leave the market because not worth it at lower price.
- ▶ Does this correspond to what we see in the data?
 - Authors point to abnormally **high** returns on long-short investment strategy.
- ▶ Potentially quite different from e.g., limits to arbitrage.
 - Could be useful for separating different mechanisms.

Comment 4: Lenders

- ▶ Mechanism depends on sensitivity of lender demand to fees.
 - Important empirical moment.
- ▶ But passive investors are potentially important class where this elasticity is zero.
 - Index funds, ETFs, etc.
 - Potentially sophisticated w.r.t. lending, but do not consider fees when setting demand.
- ▶ Can we make a prediction about how stocks with more or less passive demand should behave?
 - Less sensitive long demand \implies more stable short interest?

Conclusion

- ▶ Great paper, beautiful and intuitive mechanism.
 - Fee subsidy effect: benefits of long position increasing in short volume.
- ▶ A few suggestions for transition from plausible to powerful.
 1. Connect magnitude of fees to quantitative demand response.
 2. Consider “specials.” Can this mechanism drive these?
 3. Can price dynamics help distinguish this from alternative mechanisms?
 4. How should we think about passive investors?