Do short-selling constraints matter?

Discussion Prepared by
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Main findings

• Start with the Diamond and Verrecchia (1987) rational expectations model.
  • Market maker learns from buy/sell orders

• Add uncertainty about the number of informed traders and prohibitive costs to short sell:
  • Market prices do not converge to fundamental value
  • Market prices can overshoot or undershoot
  • Market prices may depend on the investors’ prior and the (buy/sell) sample path
Comments

• Speed of convergence
• Over- versus underpricing
• Constrained short selling
  • Evidence
• Multiple values
• Conclusion
Speed of convergence

• As long as the cost does not wipe out the entire gains informed traders will reap from shorting, they will short and therefore the price converges to fundamental value.
  • But, does the price converge more slowly when cost is negligible versus zero?

• If costs are prohibitive, and the precision of the informed traders’ signal is sufficiently high, the price converges to fundamental value.
  • Again, does the price converge more slowly when costs are prohibitive versus negligible?

• What if horizon is finite?
Over- versus underpricing

• Market makers may over- or undershoot the fundamental value depending on what their priors are relative to the true values of $\mu$ and $\nu$.
  • Confusion when updating...

• Likelihood of mispricing due to short sale constraints is higher if the fundamental value is low.
  • Mispricing more acute after bad news?

• As the ownership of asset 1 increases, it is easier to achieve convergence because there are more investors that could be long sellers.
  • Effects are dampened for large, widely held stocks?

• Empirical predictions?
Constrained short selling

• If short sale costs are non-negligible, but not prohibitive short sales will be constrained and the effect is larger the closer the market price gets to fundamental value.
  • The benefits of trading based on information decline as price converges to fundamental value.

• Numerical example shows cost exceeding 9% is prohibitive.
Contrarian Short Selling
Diether and Werner (2011)

• Constraints, as captured by loan fees, fails to deliver, and imputed loan fees, affect the strategies of NYSE and Nasdaq short sellers.

• About \(1/3^{rd}\) of the cross-section of stocks experiences a significant reduction in the contrarian response of short sellers to past returns.

• However, only for the top 1% of the cross-section is the contrarian behavior by short sellers completely eliminated.
Estimate of prohibitive costs
Dieter and Werner (2011)

\[ \text{rel.risk}_i^{it} = \sum_t \phi_t l_i^d + \sum_{j,j \neq 1} \alpha_j l_j^c + \sum_j \beta_j^+ r_{i,-5,-1}^c + \sum_j \beta_j^- r_{i,-5,-1}^c + \gamma X_{i,t-6} + \varepsilon_{it} \]  

(1)

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<th>( \beta_{gb}^+ )</th>
<th>( \beta_{gb,1%}^+ )</th>
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NYSE Stocks

Nasdaq Stocks
Delay
Diether and Werner (2011)

• Price delays are significantly higher for stocks with limited lendable supply.

• The delay is as much as 10% higher for the most constrained stocks (the top 1%).

• When constraints make it difficult for short sellers to trade on short-term overreaction, the market price deviates from fundamental value more often and for longer periods of time.
Return predictability
Diether and Werner (2011)

• For the most constrained stocks, average abnormal returns are actually negative for stocks that are lightly shorted.

• Thus, the previously documented relation between short selling activity and future returns breaks down for the most constrained stocks.
Multiple values

• With multiple possible values, market prices may converge to different values depending on the sequence of buy and sell orders.
• Provides an incentive to “manipulate” convergence
  • IPO pricing
  • Price stabilization
  • **Share-buy backs**
  • **Market timing of issuance**
  • **Announcements**
Conclusion

• Nice and clean analysis of the implication of the cost of short sales for price paths and convergence.
• Predictions make sense to me, and appear to square well with empirical evidence.
• Extensions:
  • Speed of convergence/finite horizon
  • Empirical predictions
  • Wealth constraints on the long side?
Typos (for authors)

• P. 2, “many investors informed” should be “many informed investors”

• Lemmas 7 and 8 on p. 20 should be Lemmas 3 and 4.

• Proposition 9 on p. 24 should be Proposition 4, and Lemmas 7 and 8 on same page should be Lemmas 3 and 4.

• Proposition 9 on p. 25 should be Proposition 4.