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 μ and ν.
    - 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 1/3rd 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)

$$relss_{it} = \sum_t \phi_t I_t^d + \sum_{j,j\neq 1} \alpha_j I_j^c + \sum_j \beta_j^+ r_{i,-5,-1}^+ I_j^c + \sum_j \beta_j^- r_{i,-5,-1}^- I_j^c + \gamma X_{i,t-6} + \varepsilon_{it} \qquad (1)$$

	Panel A: fee_{max} / past positive return interaction				
	β_{gb}^+	$\beta_{gb,1\%}^+$	$\beta_{1\%,4\%}^+$	$\beta_{4\%,7\%}^+$	$\beta_{>7}^+$
			NYSE Stocks		
Est. Slope Coef.: β_j^+	0.384	0.411	0.317	0.472	-0.024
	(10.44)	(13.56)	(3.76)	(4.61)	(-0.27)
Differences: $\beta_{b,1\%}^+ - \beta_j^+$		0.027	-0.067	0.088	-0.408
		(0.59)	(-0.74)	(0.82)	(-4.30)
			Nasdaq Stocks		
Slope Coef.: β_j^+	0.224	0.271	0.092	0.117	0.050
	(10.82)	(12.82)	(1.92)	(3.11)	(0.86)
Differences: $\beta_{b,1\%}^+ - \beta_j^+$		0.046	-0.132	-0.107	-0.174
		(1.62)	(-2.51)	(-2.52)	(-2.76)

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.