What Do Short Sellers Know?

Boehmer, Jones & Zhang

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Background: Shorts are Profitable Trades

- Asquith & Meulbroek (1996)
  - Short sales unconditionally predict lower future returns
- Asquith, Pathak, & Ritter (2005)
  - Short sales do predict future returns, but this effect is concentrated in certain stocks and situations
- Boehmer, Jones, and Zhang (2008)
  - Short sales predict lower future returns over short periods

So, Why Are They More Profitable? News?

- Asquith, Pathak, & Ritter (2005)
  - Short sales do predict future returns, but this effect is concentrated in certain stocks and situations
- Karpoff & Lou (2009)
  - Short sellers identify financial misconduct before it is revealed by restatements or SEC actions
- Angel, Ferri, & Christophe (2004)
  - Short-selling doesn't usually increase before earnings announcements, but when it does it correctly predicts returns

What's the Question in This Paper?

- "Traditional" question:
  - Do short sellers trade around earnings events?
    - (e.g. Christophe, Ferri, and Angel (2004), Daske, Richardson, and Tuna (2005))
- This paper's questions:
  - How much of their profitability is coming from earnings and analyst news?
  - Which short sellers have the most profitable trades around these events?
- Joins two other notable papers:
  - Fox, Glosten, and Tetlock (2010)
  - Engelberg, Reed, and Ringgenberg (2010)
    - Both use all news events….
    - Both asses the percentage of shorts advantage that comes from news

What do they do?

- Main experiment is:

$$r_{i,t,t+k} = b_0 + (b_1 + c_0 d_t)short_{i,t-5,t-1} + \gamma X_{i,t-1} + e_{i,t}$$

- Lots of perturbations *(Great Data!)*:
  - Return window
    - {[t,t+1], [t,t+5], [t,t+10], [t,t+20]}
  - Dummy Variable Events
    - {earnings announcement, analyst recommendation changes, analyst forecast changes, and combinations}
  - Categories of Shortsellers
    - {all, indiv., inst. np, inst. p, prop p., other}

- Other views
  - Cross Sectional Approach
  - Factor Timing

What do they find?

- Confirm Boehmer Jones & Zhang (2008) result:
  - One SD increase in shorting leads to 10% decrease in next week's return.
- Find about one-quarter of underperformance can be attributed to earnings and analyst-related news releases.
  - (News*Abret w/ News) + (No News*Abret w/o News) = Abret
    - 11.6%*(3.36 +3.84) + (1-11.6%)*(3.36) = 3.80 bp/day
  - 22% for earnings or analyst announcement
  - 24% for institutions around earnings, analyst announcement or analyst recommendation change.
  - 43% for all news releases for individuals.

Econometrics

Main experiment is:

$$r_{i,t,t+k} = b_0 + b_1 short_{i,t-5,t-1} + c_0 d_t short_{i,t-5,t-1} + \gamma X_{i,t-1} + e_{i,t}$$

Suppose the true model is:

$$r_{i,t,t+k} = b_0 + z_1 d_t + b_2 short_{i,t-5,t-1} + c_0 d_t short_{i,t-5,t-1} + \gamma X_{i,t-1} + \eta_{i,t}$$

In other words, the dummy variable is not included alone. So error term is:

$$e_{i,t} = z_1 d_t + \eta_{i,t}$$

Unless $z_1 = 0$, $e_{i,t}$ will be correlated with d_t, violating the OLS assumption that the independent variables are uncorrelated with the error term.

So, is $z_1=0$?

- z_1 is measuring the response of returns to earnings and analyst news when short selling is zero.
- Good reason to think that returns are different on earnings and analyst news days.
- Let's See: Use Dow-Jones News Database
  - 2005-2007
  - d_t is earnings news

  ...not actual earnings.

- All correlations with d_t are statistically significant at the 5% level.

	d_t
$short_{i;t-5,t-1}$	0.01416
d_t	1
$ret_{i;t,t+2}$	-0.00647
$ret_{i;t,t+20}$	0.00336

Replication of Table 4 – Original Specification

$$r_{i,t,t+k} = b_0 + b_1 * short_{i;t-5,t-1} + c_0 * d_t * short_{i;t-5,t-1} + \gamma LN(MC_{i,m-1}) + e_{i,t}$$

	2 Day Return % (t, t+1)		20 Day Return % (t, t+20)	
	Estimate	**t-stat**	**Estimate**	**t-stat**
intercept [b_0]	0.4811	12.21	4.0944	35.34
short [b_1]	-0.2815	-6.55	-1.6878	-13.40
d_t*short [c_0]	-0.3250	-4.77	0.1237	0.63
LN(MC) [γ]	-0.0179	-7.30	-0.1571	-21.69

Replication of Table 4 – Revised Specification

$$r_{i,t,t+k} = b_0 + b_1 * short_{i;t-5,t-1} + z_1 * d_t + c_0 * d_t * short_{i;t-5,t-1} + \gamma LN(MC_{i,m-1}) + e_{i,t}$$

	2 Day Return % (t, t+1)		20 Day Return % (t, t+20)	
	Estimate	**t-stat**	**Estimate**	**t-stat**
intercept [b_0]	0.4849	12.29	4.0818	35.19
short [b_1]	-0.3024	-6.83	-1.6180	-12.47
d_t [z_1]	-0.0675	-1.97	0.2215	2.22
d_t*short [c_0]	-0.0421	-0.27	-0.8020	-1.74
LN(MC) [γ]	-0.0179	-7.26	-0.1574	-21.72

Comment: Endogeneity/Return Controls

- Is the rec. changes/return relationship endogenous?
  - Suppose there is an unexpected event that drives both short term returns and analyst recommendation changes
  - Then the news may be causing the shorting and the return, not the analyst recommendation.
  - Especially important b/c much of the action is coming from recommendation changes.
    - Estimate of -0.1174 on c_2, vs -0.0537 on c_1 and -0.0015 on c_3

Other Questions

- The paper could do more with account types.
- I miss the other coefficient estimates.
- Date Range: Oct. 2000-Sept. 2005
  - Does not cover recent period
  - Does not cover new short selling regulatory regime
  - That could be a good thing

Overall

- Nice data, used thoughtfully, to answer a new question.
- …We learn that much of short sellers advantage comes from earnings and analyst news.
- Some issues and questions…
- But the overall picture of why do short sellers have an advantage is an important and unanswered question.