

*Discussion of:*

## The Short of It: Investor Sentiment and Anomalies

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# Overview

- 1 Summary
  - Theory/hypotheses
  - Empirical findings
- 2 Short sale constraints
- 3 Sentiment interpretation

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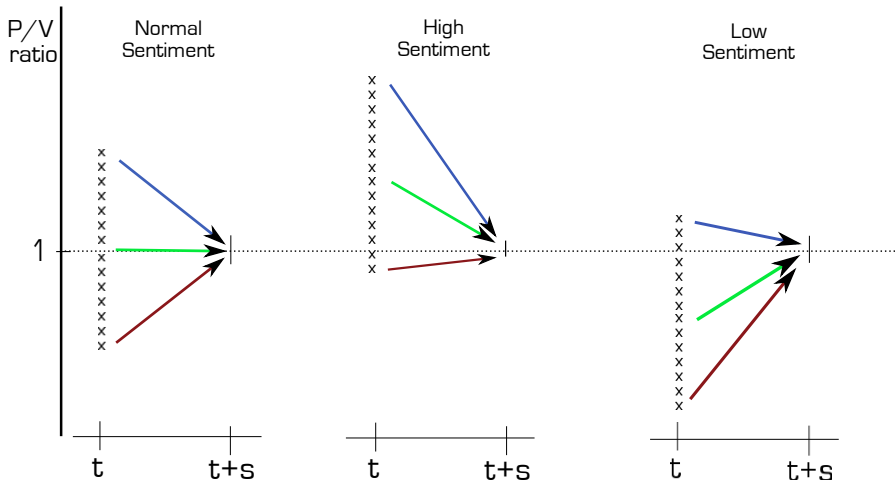
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  - The performance of the long-leg should be invariant.
- 5 Find results consistent with these hypotheses.

# Hypotheses:

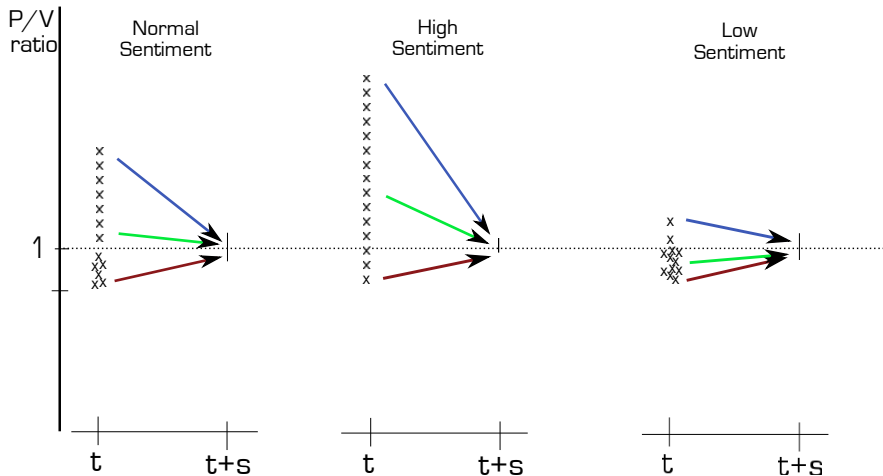
- 1 *“The anomalies should be stronger following high investor sentiment.”*
- 2 *“The short legs of the long-short strategies should have lower returns (greater profits) following high investor sentiment.”*
- 3 *“The long legs of the long-short strategies should have similar returns following high and low investor sentiment.”*



# Sentiment Effects – No Arbitrageurs



# Sentiment Effects – With Short-Constrained Arbs



## Empirical Results – Portfolios

- For the long-leg and short-leg of each anomaly portfolio, SYY estimate:

$$\tilde{R}_{i,t} = \underbrace{(a_{i,H} \cdot d_{H,t-1} + a_{i,L} \cdot d_{L,t-1})}_{\equiv \alpha_{t-1}} + b_i \cdot \tilde{R}_{MKT,t} + c_i \cdot \tilde{R}_{SMB,t} + d_i \cdot \tilde{R}_{HML,t} + \tilde{\epsilon}_{i,t}$$

- $a_{i,H}$  and  $a_{i,L}$  are the intercepts, conditional on sentiment being **H**igh or **L**ow.

# Portfolio Results - Table III

[Insert Table III here]

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- Long-Leg excess return is 0.30/0.26 (%/month) in High/Low sentiment periods
  - t-stat on difference is 0.62.
  - **Largest** individual portfolio t-stat is 1.69.
- Short-Leg excess return is -0.92/-0.26 (%/month) in High/Low sentiment periods
  - t-stat on difference is -3.89.
  - **Smallest** individual portfolio t-stat is -1.59.
- However, note that the Sharpe-ratio for the orthogonalized long-leg portfolio is 0.86/0.83 in High/Low sentiment periods.
  - For the orthogonalized short-leg portfolio, the SR is 0.99/0.43.

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- 3 “Third, individual investors, due to limited knowledge or behavioral biases, are reluctant to take short positions. ... Barber and Odean (2008) document that only 0.29% of positions of individual investors are short positions.”
- 4 “Finally, ... D’Avolio (2002) ... finds that many stocks are costly to short due to low supplies of stock loans from institutional investors.”

# Short Sale Constraints?

- The strong results on the poor performance of the short-leg of the strategies suggests short-constraints.
- However, the authors don't directly test any of these explanations.
- It would be good to **directly** link the poor performance of the short leg in high sentiment states to short sale constraints
  - *How important is each constraint?*

## 4. Hard to Borrow Stocks?

### *Can hard to borrow stocks be driving the results?*

- From D'Avolio (2002):

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- Would excluding the *hard to borrow* stocks from the sample affect the observed asymmetry?

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- However, a number of value investors also argue that because “growth options are hard to value,” you shouldn’t try.
  - Based on this, they argue, you should only buy cheap stocks and never (short) sell expensive stocks.

## 2. Risk of Short Selling?

- While the argument that shorting is risky is commonly used by practitioners, it isn't necessarily valid.
- A synthetic put strategy can always be constructed.
  - For many securities, actual puts can be purchased.
- In either case:
  - The maximum capital required to maintain the position is limited
  - Potential losses are capped.
  - Option premium is small for out of the money puts.
- *Empirically, are the results similar for stocks with traded options?*

# 1. Can institutions sell?

- While many institutions cannot short, they can certainly sell any long positions.



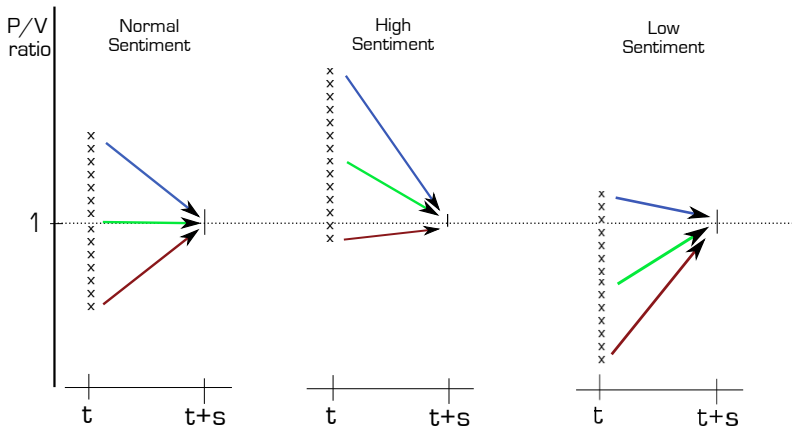
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- *Do the results still hold for stocks for which institutional holdings are large?*

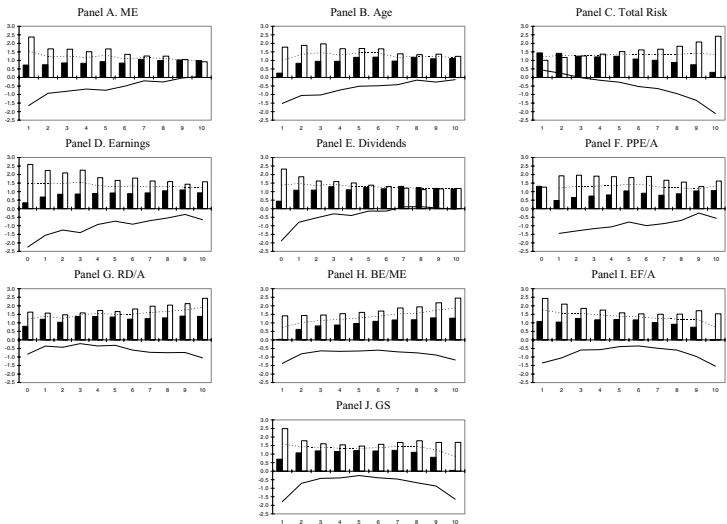
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- While many institutions cannot short, they can certainly sell any long positions.
- *Do the results still hold for stocks for which institutional holdings are large?*
- *Do they only hold when institutional holdings are close to zero?*

# Sentiment Effects – With Short-Constrained Arbs

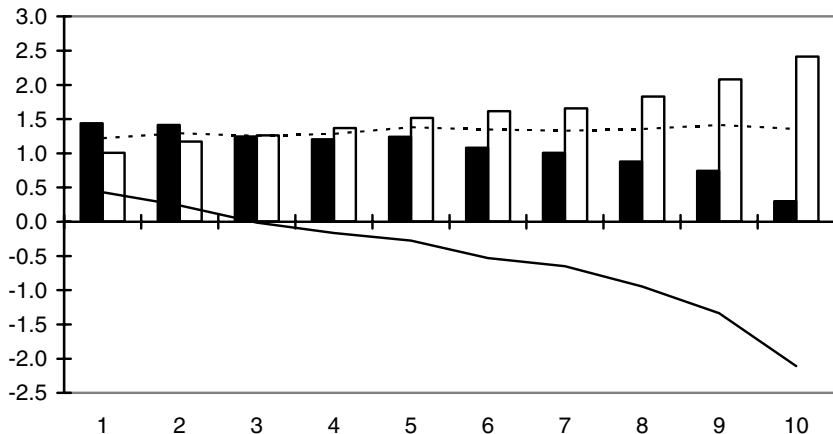


# Baker & Wurgler – Figure 2



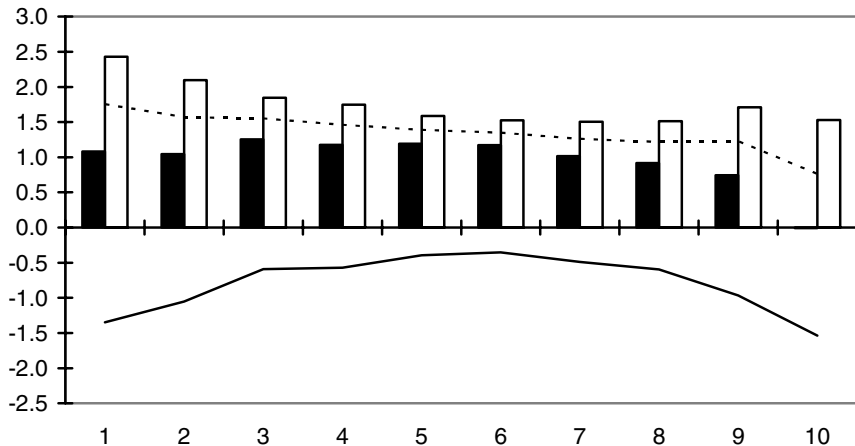
# Baker & Wurgler – Volatility Results

## Panel C. Total Risk



# Baker & Wurgler – Volatility Results

## Panel I. EF/A



# Is long capital really completely elastic?

- The premise underlying Hypothesis 3 of the paper is that unlimited capital is available to push up the price of underpriced stocks.
- Certainly, evidence from other asset classes suggests that capital constraints – not just shorting constraints – may have played in the financial crisis.
- It would be surprising if lack of capital didn't affect the magnitude of underpricing, particularly in crisis periods.

# 10 Worst Monthly Momentum Returns

- New evidence on momentum performance in crisis periods suggests that the short side of the momentum portfolio (past losers) become strongly underpriced following strong market drops, and when market volatility is high.
- From Daniel (2011):




RANK	MONTH	MOM <sub>t</sub>	MKT-2Y	MKT <sub>t</sub>
1	1932-08	-0.7896	-0.6767	0.3660
2	1932-07	-0.6011	-0.7487	0.3375
3	2009-04	-0.4599	-0.4136	0.1106
4	1939-09	-0.4394	-0.2140	0.1596
5	1933-04	-0.4233	-0.5904	0.3837
6	2001-01	-0.4218	0.1139	0.0395
7	2009-03	-0.3962	-0.4539	0.0877
8	1938-06	-0.3314	-0.2744	0.2361
9	1931-06	-0.3009	-0.4775	0.1380
10	1933-05	-0.2839	-0.3714	0.2119
11	2009-08	-0.2484	-0.2719	0.0319



# Conclusions

- Very strong results showing that profitability of anomalies is stronger in high-sentiment than low sentiment states.
- Consistent with short-sale constraints.
  - But also potentially consistent with other explanations.
  - It would be useful to more directly test for influence of constraints.
- Sentiment is perhaps picking up more than just a simple shift up or down of all equity prices.

# References I

-  Baker, Malcolm, and Jeffrey Wurgler, 2006, Investor Sentiment and the Cross-Section of Stock Returns, *The Journal of Finance* 61, 1645–1680.
-  Daniel, Kent D., 2011, Momentum crashes, Columbia Business School working paper.
-  Fama, Eugene F., and Kenneth R. French, 1993, Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3–56.