

The Good  
News is Short  
Interest

Boehmer,  
Huszar, and  
Jordan

# The Good News is Short Interest

Boehmer, Huszar, and Jordan

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# Introduction

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## Question

Is the *absence* of short selling informative about future returns?

# Introduction

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## Overview

- Portfolios of lightly shorted stocks have large and significant abnormal returns
- Both bad and *good* news known to short sellers are not incorporated into prices
- Short sellers can identify overvalued stocks and can adequately avoid undervalued stocks

# Background

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- Short sale constraints can inhibit bad news being incorporated into prices
- Miller (1977) - Stock prices too high on average because of over optimism
- Hong and Stein (2003) - short sale constraints can promote market crashes
- Diamond and Verrecchia (1987) - rational investors know negative info is withheld, account for bad news
- Desai et al. (1995), Senchack and Starks (1993) - High SIR stocks underperform

# Background

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## Previous focus

- Negative information and short selling

## Contribution

- What about lightly shorted stocks?
- Is it true that short selling is highly constrained for these stocks?
- Or are short sellers actively avoiding these stocks?
  - If no constraints, perhaps low shorting makes for good news

# Data

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## Short Interest Ratio

- Monthly snapshot of percentage of shares outstanding sold short
  - Some contradictory claims regarding SIR
  - Many studies affirm high SIR is associated with negative returns and under performance
- Data from June 1988 to December 2005 on NYSE, Amex, and Nasdaq

# Data

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## Other

- CRSP monthly returns, trading volumes, shares outstanding and end-of-month prices
- Compustat financial information from annual industrial files
- Common stock, listed for at least one year

# Data

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- Exclude data with missing monthly returns, trading volume, shares outstanding, or EOM prices
- 930,109 stock-month obs
- 634,583 from Nasdaq
- 285,541 from NYSE
- 9,985 from Amex
- Avg of 4,400 firms per month



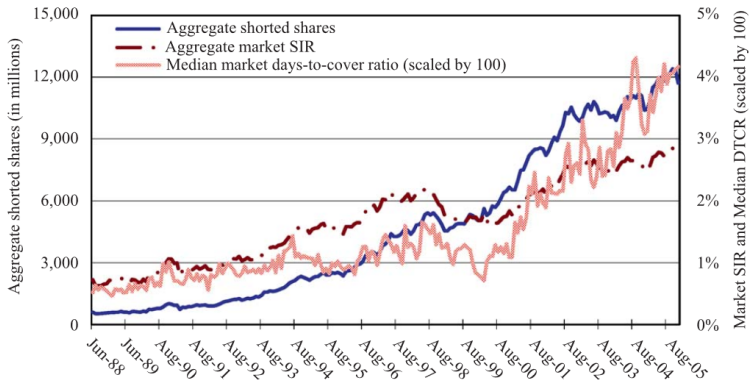
## SIR Measures

- 1 Aggregate number of shorted shares
- 2 Aggregate short interest ratio (aggregate shorting as percentage of total shares outstanding)
- 3 Median days-to-cover ratio (SIR divided by share turnover)

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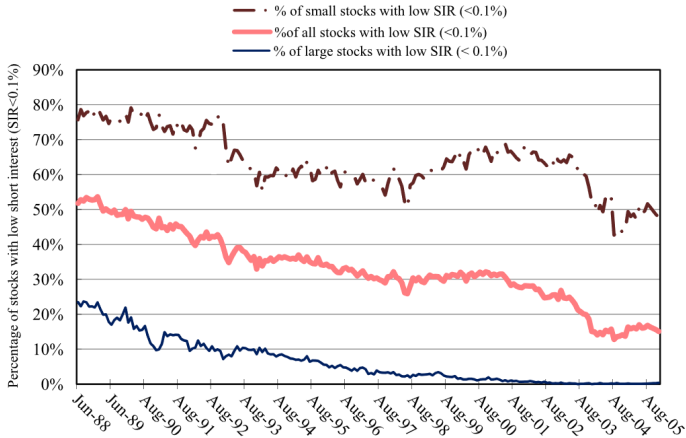


**Figure 1:** Time-Series market aggregate shorted shares, SIR, and median days-to-cover ratio

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**Figure 2:** Time-series of percentage of stocks with short interest below 0.1%

# Method

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- Test for abnormal returns during calendar month following WSJ publications of SIR data
- Create portfolios of lightly and heavily shorted stocks
  - 99th, 95th, 90th, 10th, 5th, 1st percentiles for SIR
- Use Fama-French-Carhart Four Factor model to test for abnormal returns for portfolios
- Use both equal and value weighted portfolios

# Baseline Results

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## Notable Results

- Large, significant positive abnormal returns for lightly shorted stock portfolio
- Lightly shorted portfolio contains small cap value stocks
- Long/short portfolio has positive returns and negative beta
- Equal weighted has stronger results than value weighted portfolio

# Baseline Results

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Portfolios/# Stocks	Raw ret.	Excess ret.	Intercept	RMRF	SMB	HML	MOM
<i>Panel A: Monthly equal-weighted returns of high and low SIR stock portfolios</i>							
SIR 99%	-0.001	-0.005	-0.012	1.359	1.239	-0.202	-0.282
# 45 Stocks			<.001	<.001	<.001	0.041	<.001
SIR 95%	0.004	0.000	-0.005	1.303	1.102	-0.144	-0.387
# 221 Stocks			0.002	<.001	<.001	0.019	<.001
SIR 90%	0.005	0.002	-0.004	1.298	1.001	-0.087	-0.381
# 441 Stocks			0.007	<.001	<.001	0.084	<.001
SIR1%	0.021	0.017	0.014	0.563	0.701	0.383	-0.319
# 232 Stocks			<.001	<.001	<.001	<.001	<.001
SIR 5%	0.020	0.017	0.013	0.592	0.722	0.415	-0.282
# 302 Stocks			<.001	<.001	<.001	<.001	<.001
SIR10%	0.020	0.017	0.013	0.607	0.769	0.412	-0.251
# 473 Stocks			<.001	<.001	<.001	<.001	<.001
SIR1%-SIR99%	0.022		0.026	-0.796	-0.538	0.585	-0.037
			<.001	<.001	<.001	<.001	0.581
SIR5%-SIR95%	0.017		0.019	-0.710	-0.380	0.558	0.105
			<.001	<.001	<.001	<.001	0.026
SIR10%-SIR90%	0.015		0.016	-0.690	-0.233	0.499	0.130
			<.001	<.001	<.001	<.001	0.002

**Figure 3:** Regression Analysis of monthly returns on Equal Weighted Portfolios

# Baseline Results

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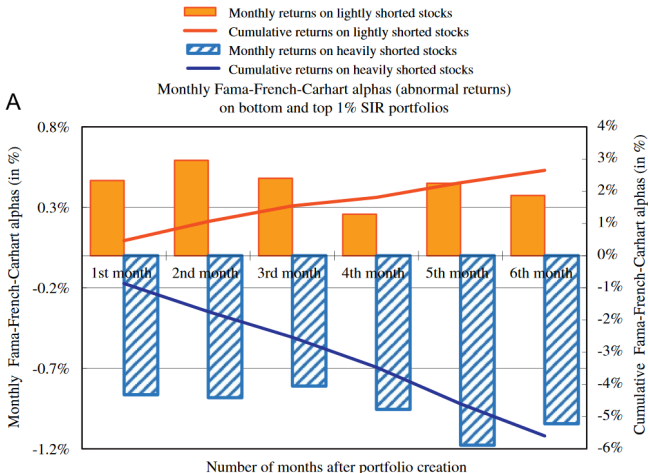
Portfolios/# Stocks	Raw ret.	Excess ret.	Intercept	RMRF	SMB	HML	MOM
<i>Panel B: Monthly value-weighted returns of high and low SIR stock portfolios</i>							
SIR 99%	0.004	0.001	−0.009	1.436	0.985	−0.298	−0.030
# 45 Stocks			0.005	<.001	<.001	0.007	0.642
SIR 95%	0.010	0.006	−0.001	1.358	0.584	−0.380	−0.040
# 221 Stocks			0.452	<.001	<.001	<.001	0.276
SIR 90%	0.011	0.007	0.000	1.332	0.448	−0.319	−0.101
# 441 Stocks			0.937	<.001	<.001	<.001	0.001
SIR1%	0.013	0.009	0.005	0.544	0.521	0.484	−0.128
# 232 Stocks			0.003	<.001	<.001	<.001	<.001
SIR 5%	0.014	0.010	0.005	0.590	0.543	0.514	−0.110
# 302 Stocks			0.001	<.001	<.001	<.001	<.001
SIR10%	0.014	0.010	0.004	0.614	0.566	0.510	−0.090
# 473 Stocks			0.002	<.001	<.001	<.001	0.002
SIR1%–SIR99%	0.009		0.013	−0.892	−0.464	0.782	−0.099
			<.001	<.001	<.001	<.001	0.149
SIR5%–SIR95%	0.004		0.006	−0.767	−0.041	0.894	−0.069
			0.013	<.001	<.001	<.001	0.179
SIR10%–SIR90%	0.003		0.004	−0.718	0.118	0.830	0.011
			0.049	<.001	0.060	<.001	0.811

**Figure 4:** Regression Analysis of monthly returns on Value Weighted Portfolios

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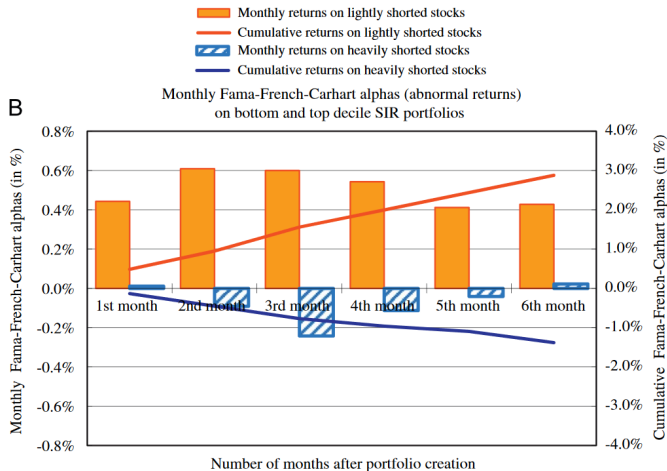
**Figure 5:** Monthly alphas on equal weighted portfolios



# Baseline Results

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**Figure 6:** Monthly alphas on value weighted portfolios

# NYSE-Amex vs Nasdaq

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- Nasdaq-only returns similar to baseline due to size
- NYSE-Amex sample has smaller returns
  - Not all abnormal returns are significant
- Stocks more heavily shorted in smaller NYSE portfolio
- But, results are more attributed to trading activity and firm size than venue

# NYSE-Amex vs Nasdaq

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## Details

- NYSE-Amex Equal Weighted
  - Lightly shorted stocks have sig. positive excess returns 0.4% per month for SIR 5% and 10%
  - SIR 1% is not significant
  - 1% minus 99% is significant with 2.1% excess return and beta -0.659
- NYSE-Amex Value Weighted
  - Not significant
  - Long/short portfolio still has significant return, with beta -0.682

# Subperiod Results

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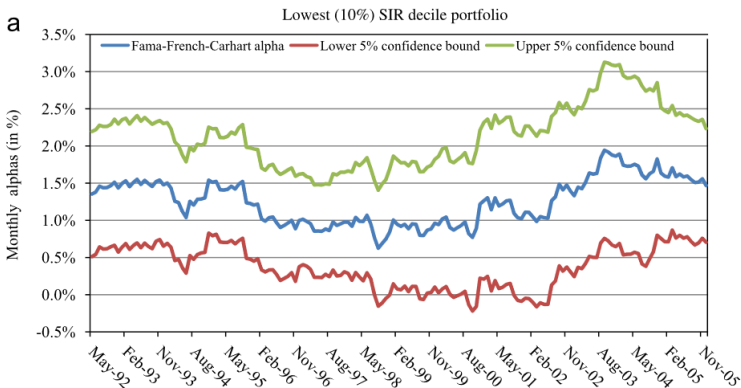
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- Returns do not appear period specific with 48 month rolling returns
- Rolling betas appear quite stable as well
  - Heavy shorted stocks 1.2 to 1.4 with tight standard errors
  - Lightly shorted stocks 0.4 to 0.8 with tight standard errors
- Dividing into two subperiods give similar results to one whole period

# Subperiod Results

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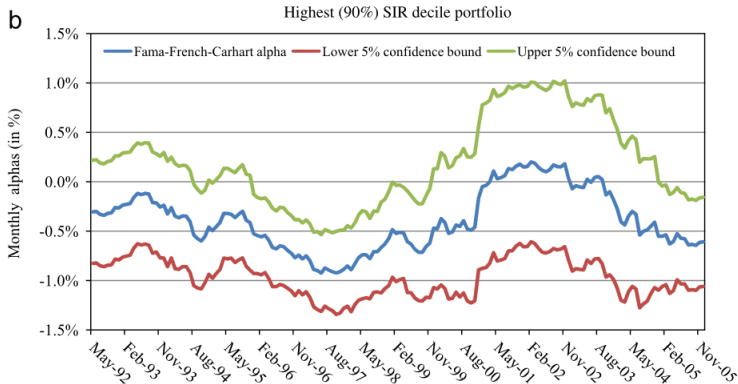


**Figure 7:** FF-Carhart alphas on rolling 48 month intervals Lowest decile

# Subperiod Results

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**Figure 8:** FF-Carhart alphas on rolling 48 month intervals Highest decile

# Sorts on Firm Characteristics

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- High SIR stocks have larger market caps
- High SIR stocks have higher prices
- High SIR stocks have lower B/M ratios
- High SIR stocks have lower median earnings yields and median profit margins
- High SIR stocks have weaker fundamentals, and are more heavily traded

Does this imply that size and liquidity are driving results?

# Sorts on Firm Characteristics

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	Low SIR stocks		High SIR stocks		Means t-test	Sign test
	Mean	Median	Mean	Median	p-value	p-value
Market capitalization	58.312	28.848	1,125.094	410.403	< .001	< .001
Total sales	93.857	37.235	1,233.294	299.407	< .001	< .001
Book-to-market (equity)	0.998	0.831	0.612	0.427	< .001	< .001
Book-to-market (asset)	0.932	0.868	0.569	0.507	< .001	< .001
Debt-equity ratio	1.563	0.416	2.462	0.545	< .001	< .001
Earnings-price ratio	-0.149	0.038	-0.170	0.026	0.154	< .001
Profit margin	-0.724	0.026	-5.547	0.029	< .001	0.051
Turnover	0.035	0.019	0.274	0.182	< .001	< .001
SIR	0.000	0.000	0.089	0.071	N/A	N/A
Share price	8.619	5.303	22.594	18.357	< .001	< .001

**Figure 9:** Comparison of Low/High SIR firms



# Sorts on Firm Characteristics

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Concerning size, breakpoints in construction of SMB may be of issue. All smaller Nasdaq stocks ended up in a single portfolio

## Joint Effects of Size and Trading

- Construct size and trading intensity with 4x4x4 sort on:
  - 1 Size
  - 2 Turnover
  - 3 SIR

# Sorts on Firm Characteristics

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## Process

- 1 Look at entire sample
- 2 Leave out Nasdaq
- 3 Leave out NYSE-Amex

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For three smaller size quartiles:

- Large abnormal returns for low SIR stocks in higher turnover groups
- returns in low SIR and larger than returns on high SIR portfolios across all turnover quantiles

For large size quartile:

- weaker results across the board, but still significant results
- portfolio with long high turnover, low SIR, and short high turnover, high SIR has 1.9% monthly return

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For NYSE only stocks, results are much the same

- long/short portfolio with high turnover has 2.6% monthly abnormal return
- Significant negative abnormal returns in highly shorted stocks are outside largest quartile

Overall, results most pronounced in smaller stocks

# Results

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For Nasdaq only stocks:

- Most shorted portfolios tend not to have significant abnormal returns
- Least shorted portfolios have significant positive returns for all but one portfolio
  - Smallest, highest turnover have highest returns

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- For low SIR stocks, high turnover is important
- Also, smaller firms is important - Venue does not appear to matter

# Robustness

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- Nasdaq bubble period of 1998 - 2000
  - Exclude cheap stocks and dates 1998 - 2000
  - large, positive abnormal returns for low SIR, high turnover stocks
- Optionable Stocks
  - Stocks without options more difficult to short
  - Low short interest could be a function of constraints
  - Eliminating stocks with options still gives consistent results (eliminates large firms)

# Robustness

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- Lagging
  - smaller results in some value-weighting, but still significant
- Momentum
  - Divide winners from losers, sharpens results especially for low SIR



# Robustness

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- Positive information in low short interest stock could precede the short interest
- Look at large decrease in short interest (25%) across three months for each stock
- Level of short interest is persistent
- Conclusions unaffected by excluding stocks with larger changes in SIR

# Summary and Extensions

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- Short sellers can not only identify overvalued stocks but undervalued ones too
- Stocks are highly traded (high turnover) despite being small, so constraints don't appear problematic
- Does the act of focusing on losers necessarily bring the ability to identify winners?
  - Why don't short sellers arbitrage this away?
- Repeat study with longer time period, Recession included