

The Need for Speed: High Frequency Finance and Short Selling

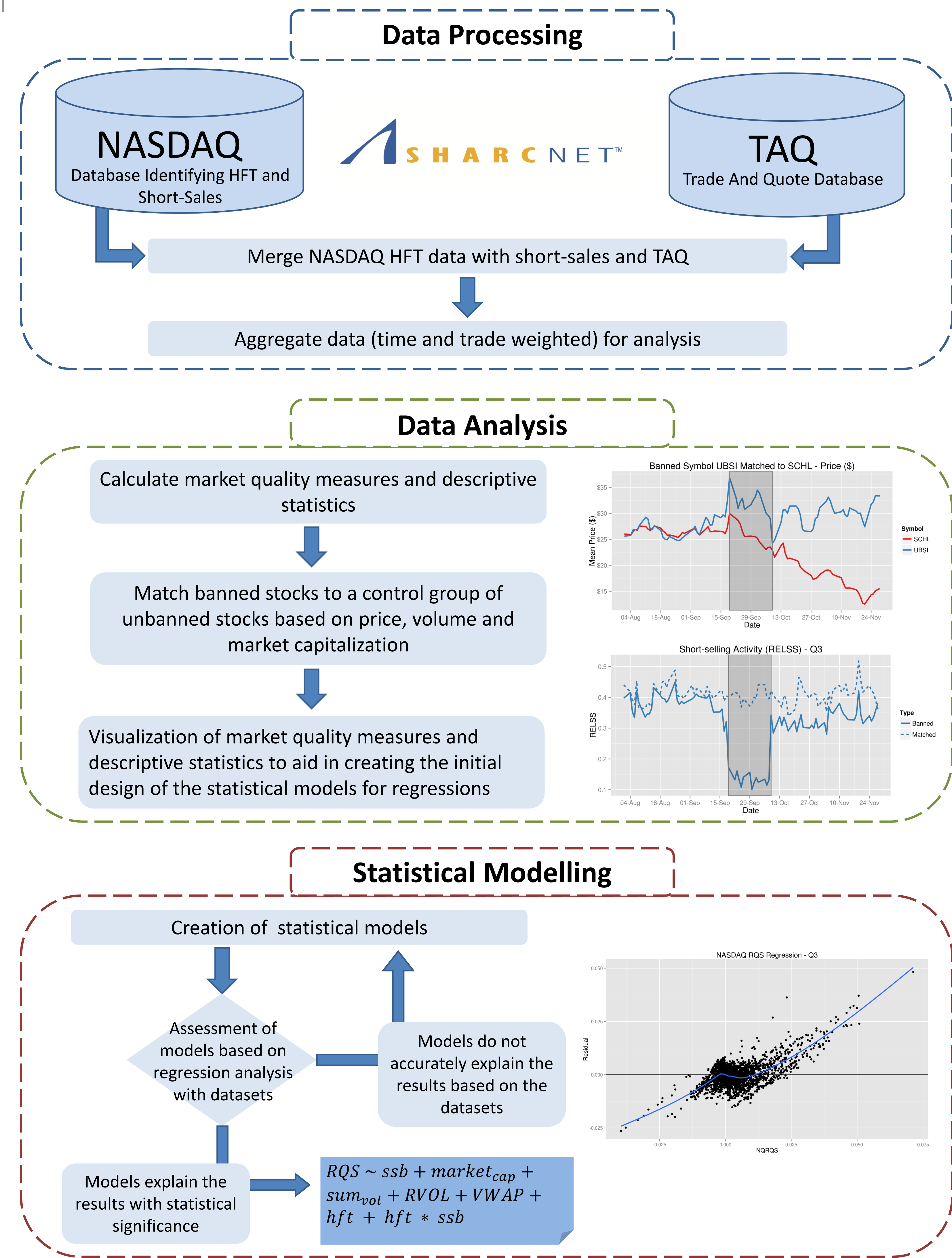
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Introduction

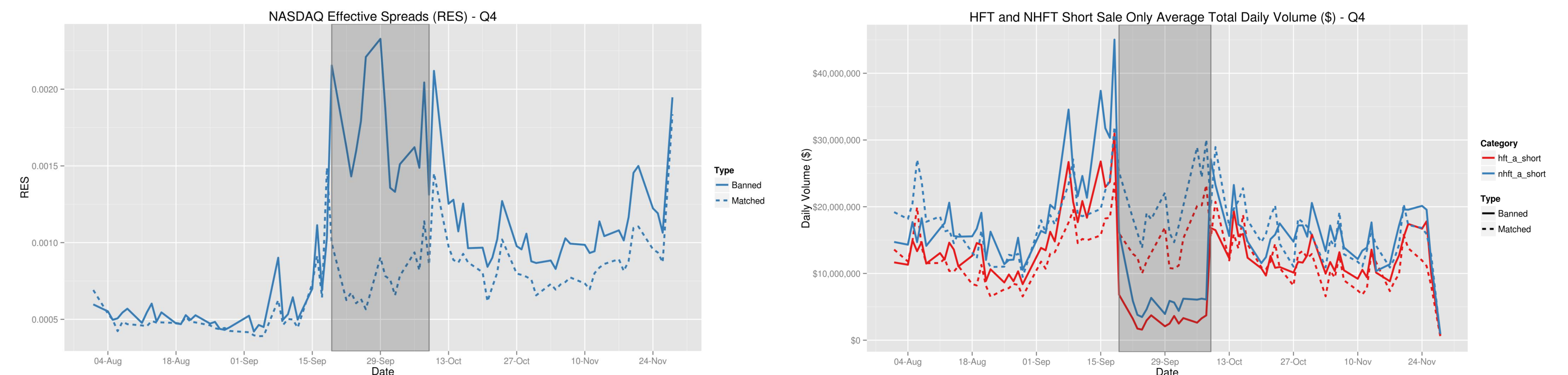
- ▶ The goal of the research was to better understand the impact of the short-selling activities of high frequency traders (HFT) on market liquidity and efficiency.
- ▶ Two NASDAQ databases were used, containing more than 1000 stocks over a four month period that includes a ban on short-selling during the recent financial crisis.
- ▶ Our findings will help regulators, investors and market operators to better understand the impact of regulations restricting short-selling and the impact of HFT before, during and after regulatory interventions.

Methodology



Results

Market Quality Analysis



The figures describe the impact from the ban on short-selling based on the daily averages for each market capitalization quartile, with the highlighted area representing the period in which the ban was in effect. Our results show a significant impact on larger market capitalization, which is corroborated by Boehmer, Ekkehart, Jones, and Zhang (2013).

Shorting Ban Market Quality Impact

Dep. Variable	Ban Dummy	DVOL	MKT CAP	RVOL	VWAP	Adj. R ²
RQS	4.454e-03 ***	-4.599e-05 **	-1.055e-11	3.610e-02 ***	1.521e-04	52%
RES	1.719e-03 ***	-9.747e-06	-4.331e-12	1.560e-02 ***	3.620e-06	48%
RPI5	3.620e-06	3.688e-06	5.825e-12	-1.083e-04	-7.866e-07	2%
RVOL	8.051e-03 ***	4.486e-04 ***	-2.889e-10 *		-2.958e-04 ***	26%

Dep. Variable	Quartile 1 (Smallest)	Quartile 2	Quartile 3	Quartile 4 (Largest)
RQS	8.296e-03 **	4.407e-03 ***	3.598e-03 ***	3.152e-02 ***
RES	3.541e-03 **	2.046e-03 ***	1.188e-03 ***	5.099e-04 ***
RPI5	2.547e-04	1.415e-04	-1.500e-04	6.132e-05
RVOL	2.445e-03	7.127e-03 ***	6.716e-03 **	1.482e-02 ***
Number of pairs	47	47	48	48

The first table describes the overall impact of the shorting ban on market quality measures, the second the impact of the ban on each market cap quartile reflected by the ban-dummy coefficients. Regressions were performed using daily panel data of the difference between each banned symbol and the corresponding match. The significance at the 10%, 5%, and 1% level are indicated by *, **, and ***.

Conclusions and Further Research

- ▶ The results suggest that the short-selling activities of HFT were not significantly different than those of non-HFT, which are in contrast to popular opinion.
- ▶ Further research could be done to better analyze sub-populations and variances based on factors other than market capitalization quartiles, such as the attributes used to match stocks (price, volume, and market capitalization)

References

Boehmer, Ekkehart, Charles M. Jones, and Xiaoyan Zhang. "Shackling short sellers: The 2008 shorting ban." *Review of Financial Studies* 26, no. 6 (2013): 1363-1400.

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