

Microscopic simulation of the magnet effect of price limits

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The limit on daily stock price changes is known to have a "magnet effect", that accelerates the approaches of stock prices to the limit and eventually halts the trades. We study the price dynamics of stocks traded in Korean Stock Exchange, which restricts the daily price change to 12 or 15 percents, by developing a market model of traders with various own target returns. The magnet effect is mainly driven by the expected price jump at the following day, so traders exploit their strategy sensitive to the price dynamics. The expectation reinforcing process among traders depends on the speed of convergence to the limit, and the bounded trading activities near the limit before freezing. We also explore for the case of no limit from our model. The result shows the price limit plays even a negative effect for the long-term volatility, while it provides some opportunities to react for less-active traders.