Ultrafast Trading Costs Stock Investors Nearly $5 Billion a Year, Study Says

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High-frequency traders earn nearly $5 billion on global stock markets a year by taking advantage of slightly out-of-date prices, imposing a small but significant tax on investors, a new study says.

The study—released Monday by the U.K.'s financial regulator, the Financial Conduct Authority—sheds light on a controversial practice called "latency arbitrage," in which ultrafast traders seek to react to fresh, market-moving information more quickly than others can.

Such information could range from corporate news to economic data to price fluctuations in other stocks or markets. Electronic trading firms invest in sophisticated technology, such as networks of microwave antennas linking exchanges thousands of miles apart, to process such information and execute trades in millionths of a second.

The FCA's study comes as politicians in both Europe and the U.S., including Sen. Bernie Sanders (I., Vt.) and Sen. Elizabeth Warren (D., Mass.), have pushed for a financial-transaction tax, a policy aimed in part at curbing high-speed trading. The study could also fuel efforts by exchanges to restructure their markets to limit latency arbitrage—for instance, by introducing split-second delays before trades, known as speed bumps.

Some firms use microwave transmissions to process information needed to quickly execute their trades.

Photo: Daniel Acker/Bloomberg News

Many experts say latency arbitrage raises costs for investors by making everyone in the markets less likely to post competitive price quotes for stocks, knowing that those quotes could get picked off by speedy traders. That, in turn, means investors get slightly worse prices whenever they buy or sell shares, traders say.

Advocates of high-frequency trading disputed the FCA's study.

"Many academics have debunked the latency arbitrage myth and this paper seems to have a political agenda," said Kirsten Wegner, Chief Executive Officer of Modern Markets Initiative, a U.S. lobbying group for high-frequency trading firms.

Automated trading has benefited investors over the years by significantly cutting the cost of executing stock transactions—savings that are ignored by the FCA's study, Ms. Wegner added. She also criticized the study for relying on a relatively small set of U.K. trading data to estimate latency-arbitrage profits on stock exchanges world-wide.

An FCA spokesman denied that the regulator was seeking to advance a political agenda related to high-frequency trading.

Precise data on latency-arbitrage profits is unavailable because of the opaque nature of most high-frequency trading firms.

The FCA's study called latency arbitrage a "tax" amounting to 0.0042% of daily

stock-trading volume. The study's authors derived that figure by examining about two months of activity at the London Stock Exchange in 2015, using a type of raw trading data that hasn't been previously studied by researchers.

Although that is a tiny number—less than one-half of one-hundredth of 1%—the study's authors say it adds up. If latency arbitragers made a similar rate of profits elsewhere, they would have earned $4.8 billion on stock exchanges around the world in 2018, including $2.8 billion at U.S. exchanges, the FCA study found.

Moreover, the impact of latency arbitrage is unevenly distributed, with big investors facing the greatest costs, according to the study's authors, who include two FCA researchers and a professor at the University of Chicago's Booth School of Business.

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"The latency arbitrage tax does seem small enough that ordinary households need not worry about it in the context of their retirement and savings decisions," they wrote. "Yet at the same time, flawed market design significantly increases the trading costs of large investors, and generates billions of dollars a year in profits for a small number of HFT firms and other parties in the speed race, who then have significant incentive to preserve the status quo."

The study found that about one-fifth of trading activity at the LSE was concentrated in brief "races" between firms seeking to engage in latency arbitrage. In such races, two or more firms attempt to trade the same stock at the same time, but only the first can profit by being the quickest to execute its trade.

During the period examined in the study—43 trading days from August to October 2015—about 22% of trading volume in FTSE 100 stocks took place in such races, which on average lasted 81 millionths of a second, the study found. The FTSE 100 is the U.K.'s large-cap index, with such companies as BP PLC and Vodafone Group PLC.

The FCA's study relied on more than 2 billion electronic messages that trading firms sent to the LSE, or that the exchange sent to traders, during that period.

Such data—which hasn't been used in past studies of latency arbitrage—showed failed attempts to trade as well as actual trades. That allowed the authors to reconstruct the tiny bursts of activity in which multiple firms raced to seize the same brief profit opportunity.

The data also showed only a few firms can profit from latency arbitrage, a finding that likely reflects the cost of building and maintaining the technology needed for ultrafast trading.

More than 80% of races in FTSE 100 stocks were won by the same half-dozen firms, the study found. It didn't identify the firms in question.

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