HIGH-FREQUENCY BANDITS

Scott Lichtenstein
Yonsei University

Michael Lewis returns to Wall Street to report on a high-tech predator stalking the equity markets.

Lewis, Michael. Flash Boys: A Wall Street Revolt. W. W. Norton & Company, 2014.

High-frequency trading is often poorly understood. The name seems to give the impression of amoral traders using the speed of their computers to outmaneuver the average retail investor. Michael Lewis capitalizes on this sentiment in his recent book Flash Boys, and blames the industry for "ripping off the retirement saves of the entire country through systematic fraud." Lewis focuses his story on a group of former employees of the Royal Bank of Canada who set out to create an exchange that would protect average traders from becoming the prey of high-frequency traders. In the process, Lewis gives a detailed account of the industry's origins and moral implications.

The Basics of High-Frequency Trading

Essentially, according to Lewis, high-frequency trading involves two forms of arbitrage. The first he calls "electronic front-running." High-frequency traders design programs to determine an investor's likely course of action in the stock market and then try to make the trades ahead of that investor. Say, for example, a portfolio manager wanted to buy 100,000 shares of Microsoft. Doing so outright would drive up the price of Microsoft stock, costing the portfolio manager additional money. To prevent this from happening, brokers will often break up large orders into many smaller ones and send them out to the various exchanges operated by banks and broker-dealers. Ideally, breaking up the order in this way would prevent the market from realizing that such a large order is coming and would keep the price of Microsoft stock from rising too high. However, high-frequency traders have designed programs to discern the likely behavior of brokers based on the orders they send out. These traders use the speed of their computers to buy up Microsoft shares before the broker is able to, and then sell it back to the broker at a slightly higher price than he would have gotten without the presence of the high-frequency trader.

Lewis calls the second form of arbitrage used by high-frequency traders "slow market arbitrage." The modern American stock market involves a few dozen individual exchanges, all listing the same stocks. When the price of a stock on one exchange moves slightly, it will take a few microseconds for the other exchanges to react. High-frequency traders use the speed of their computers to take advantage of this momentary mispricing by buying the stock on the exchange where it is slightly cheaper, selling it on the exchange where it is slightly more expensive, and pocketing the difference.

Both of these forms of arbitrage came about with the recent deregulation of exchanges. Before the 1980s, all trading was done on the NYSE or the NASDAQ, but over time the Securities and Exchange Commission (SEC) has allowed banks and broker-dealers to set up their own exchanges, often called "dark pools." The banks and broker-dealers then sell access to their dark pools to high-frequency traders, who pay large amounts of money in order to get more information about the orders being placed inside each dark pool. The traders use this special access to gain more information about what investors are likely to do, allowing them to better perform both types of arbitrage.

Flash Boys focuses on a group of traders from the Royal Bank of Canada who left their jobs to found the Investor's Exchange, also known as IEX, in 2013. In order to combat the "predatory" nature of high-frequency trading, the IEX delays all orders for 350 microseconds, which they have found to be enough time to significantly reduce the advantage of the high-frequency traders. These men (they are almost all men), thought that the behavior of the high-frequency traders was predatory and investors needed a way to avoid being taken advantage of.

The Moral Implications of High-Frequency Trading

Front-running is when a broker buys a stock before a big investor, allowing the broker to profit from the increase in price of the stock that happens when a big order is placed. This behavior is clearly both immoral and illegal. The broker is using non-public information (the investor's intention to buy the stock) to profit at the expense of his client. However, a third party using public information to make an educated guess about an investor's intentions is reasonable, and in fact quite common. The price of stocks are routinely bid up when the market suspects the underlying companies are likely targets for takeovers. In this case, speculators used public knowledge and their own intuition to try and predict the movement of the stocks' prices, which is not illegal or in any way a form of theft. This is somewhat similar to the first type of arbitrage utilized by high frequency traders, what Lewis called "electronic front-running," as the traders are trying to predict the behavior of investors based on their actions in the market. The question of whether or not these actions are immoral boils down to what type of information are they using, is it public, and how did they get it?

Rather than recognizing this issue, Lewis indicts the entire industry. His book is peppered with accusations, such as "the US financial markets had always been either corrupt or about to be corrupted." He even claims "the stock market at bottom was rigged. The icon of global capitalism was a fraud." The book is mostly incendiary and over-the-top, with little discussion of the nuances of the industry. We are not given any reason to believe that other investors could also perform the same type of arbitrage if they had the appropriate hardware and software. What makes high-frequency trading so morally wrong? Lewis does not give us a discussion of why he thinks it is bad; we are left to take his accusations at face value.

For example, there should be little doubt in most people's minds that the second type of arbitrage used by high-frequency traders, "slow market arbitrage," is actually good for the market. Mispricings between exchanges are inefficient, and inefficiency costs the economy money. High-frequency traders reduce this inefficiency by correcting mispricings. From the days of the earliest arbitrageurs correcting the price of gold between Paris and London, this type of transaction has benefited the economy by preventing assets from becoming too expensive or too cheap in different locations. A transaction at a price that is "too cheap" or "too expensive" means someone is being "ripped off" (to use Lewis's term). This inefficiency takes value out of the economy, costing all of society.

As for the first type of arbitrage, "electronic front-running," the morality of this type of action depends on the information used. It is clear from Lewis's discussion of this topic that the banks and broker-dealers running dark pools went out of their way to give high-frequency traders an advantage. The 100+ different order types and privileged access given to high-frequency traders were meant for them to have an additional advantage over more traditional investors. But is this advantage unfair? It would be unwise to argue that investors purchasing research reports on specific stocks have an unfair advantage; even though they are paying for information that is not generally known to the public, the research report is based on public information and everyone has the opportunity to buy it. Is the access to dark pools more similar to the purchasing of additional research, or is it more like traditional front-running? Unfortunately, Lewis refuses to engage in this debate and indicts the entire industry without analyzing the moral implications of what they are doing. To him, this is pure theft, plain and simple. While it is probably wise to maintain a healthy skepticism of the financial industry in the wake of the recent crisis, Lewis's bold accusations need more honest and impartial analysis to be truly believable.

Some institutional investors even go so far as to endorse high-frequency trading. Clifford Asness and Michael Mendelson, two employees of the investment fund AQR Capital Management, recently penned an opinion piece in the Wall Street Journal in support of the industry.[1] They argue that high-frequency trading has lowered the costs of investing and that "a more efficient market shouldn't be mistaken for an unfair one." The speed necessary to be a successful high-frequency trader, they write, isn't in order to defraud the average retail investor, but to "get ahead" of other high-frequency traders. The average retail investor actually benefits because of the reduced costs of trading. They argue: "But there has been one unambiguous winner, the retail investors who trade for themselves. Their small orders are a perfect match for today's narrow bid-offer spread, small average-trade-size market. For the first time in history, Main Street might have it rigged against Wall Street."

If high-frequency trading is so morally wrong according to Lewis, it would seem that he should have some policy implications. What should the government do? Should high-frequency trading be banned? Unfortunately, there is no discussion of these questions in the books. It seems, though, that the market can solve this problem (assuming it is a problem). Exchanges like IEX can make money by providing investors a platform to avoid high-frequency trading, so that only those who don't care or want to interact with high-frequency traders have to. Additionally, much of what seemed to anger Lewis was actually caused by the operators of the dark pools—the banks and broker-dealers. The privileged access and many types of orders they of-

1 Asness, Clifford and Mendelson, Michael. "High-Frequency Hyperbole." *The Wall Street Journal,* April 1, 2014.

fered are now being heavily scrutinized thanks to Lewis's book. This sort of attention tends to be more powerful than many forms of SEC regulation. The banks operating dark pools interact with thousands of clients beyond just high-frequency traders, and any anger from them would powerfully pressure the banks to disclose more and behave better. The finance industry has a way of setting things to their advantage when no one is looking, meaning that this type of public oversight is good for the industry. Lewis's book, despite its somewhat audacious accusations and unbalanced portrayal, will do more to illuminate that shadowy world of dark pools than any government intervention. **Y**