

Knowledge Resources and Book Reviews

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MICHAEL LEWIS, *Flash Boys: A Wall Street Revolt*. (New York, NY: W.W. Norton & Company, 2014, ISBN-13: 978-0393244663, ISBN-10: 039344660, 288 pages, \$27.95).

INTRODUCTION

In addition to writing as a columnist for Bloomberg and *The New York Times Magazine*, renowned and sometimes controversial financial journalist Michael Lewis has written captivating non-fiction bestsellers. Lewis has written about the evolution of mortgage-backed bonds in *Liar's Poker* (1989), Silicon Valley's obsession with innovation in *The New New Thing* (1999), the success of Billy Beane and the Oakland A's in *Moneyball: The Art of Winning an Unfair Game* (2003), and the housing and credit bubble of the 2000s in *The Big Short: Inside the Doomsday Machine* (2010). Lewis has achieved wide acclaim for these non-fiction books and for his ability to explain environmental complexities and problems in a way the lay-reader can understand. In his most recent book, *Flash Boys*, Lewis takes the reader on a behind-the-scenes journey through the world of stock markets. This is the story of Brad Katsuyama's experience with and fight against the world of high-frequency trading (HFT)¹, a practice in which the SEC has recently started to show interest as part of its mission to "protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation" (U.S. Securities and Exchange Commission). On May 1, 2014, the SEC charged the NYSE and two other exchanges for failing to comply with the responsibilities of following securities laws, specifically citing how the NYSE provided "co-location" services to customers that effectively gave them an edge in terms of trading speed (Krantz 2014). The exchanges agreed to pay a \$4.5 million penalty (Krantz 2014).

SUMMARY

In *Flash Boys*, Lewis tells a compelling story about how individuals (e.g., Canadian trader Brad Katsuyama) learned that HFT firms profit from the news that traders are unknowingly providing by placing orders through their electronic trading platforms on slower connections than the HFT firms. The HFT firms are described as front-running the orders or profiting from the speed with which they see and act on pending orders. One difficulty with the argument that investors are being harmed is that no one really knows how much HFT firms are actually able to generate by placing themselves in the middle of these transactions; although estimates are in the billions of dollars annually. Furthermore, there is no data publicly available that allows the comparison of the costs of HFT (i.e., HFT revenues as a tax to investors) to the benefits of HFT (i.e., improved liquidity and lower transaction costs for trading) (Siegel 2014).

¹ HFT occurs when sophisticated technology and computer algorithms are used to rapidly trade securities in fractions of a second.

While Lewis' argument about how the market is rigged appears to make sense on its face, there is no mention of an alternative perspective: that the cost of having slower connections to the exchanges is a transaction cost (whether necessary or unnecessary) to investors. The Director of Research at the Research Foundation of the CFA Institute, Laurence B. Siegel, provides a unique perspective of HFT as a tax on trading, albeit a much lower tax than income tax or savings tax (the opportunity cost of putting money in a savings account that pays interest 2% to 3% below inflation).² Siegel (2014) also mentions how HFT firms are not always as villainous as described in Lewis' book. HFT firms can actually create price improvements and market liquidity³, knocking out the original market maker by being satisfied with a lower profit from a smaller spread (Siegel 2014).

When investigated further, it becomes evident that the picture painted by Lewis in *Flash Boys* is not as black and white as he makes it seem. There are various shades of grey in these new markets in which HFT firms play a significant role. Larry Harris, a professor of finance at the University of Southern California classifies HFT into three categories: 1) Valuable HFT, 2) Harmful HFT, and 3) Very Harmful HFT (2013). While Valuable HFT occurs when liquidity increases because HFT firms provide opportunities to investors to trade (thereby lowering transaction costs), the real danger of HFT firms is the threat they pose to competition in the market when they strive to be the fastest (not faster, but the fastest) in a winner-takes-all arms race for the ability to front-run orders (Harris 2013). Harris argues that the fastest HFT firms will drive out their slower competitors, driving the costs of trading higher because the remaining HFT firms will no longer have to quote aggressive prices to obtain order flow (2013). Due to the secrecy surrounding HFT, and the rapidly evolving software and strategies, it may be some time before we have enough information to make a determination about the effects of HFT.

Relevance to Students and Faculty: Information Systems and Ethics

Students and faculty of accounting information systems and financial accounting courses would benefit greatly from learning about the potentially disruptive effects of constantly and rapidly evolving technology, and how rare individuals can make a difference by attending to these threats. Specifically, the ability of technology to process transactions ever faster creates a system that allows those with resources and access to faster connections to profit from these advantages. The Efficient Market Hypothesis suggests that the markets are informationally efficient (Scott 2006). Unfortunately, the sad reality described in Lewis' book is that the financial markets are not a level playing field because some players are able to get access to information before others. Though there are no legal restrictions on using a faster connection, their prohibitively high cost prevents all market players from acquiring and benefitting from the same high speed connections.

Despite Lewis' assertion that the market is rigged and that many players in the market are profiting at the expense of general investors, there remain individuals who, perceiving HFT as unethical, refuse to profit in this way. In fact, Brad Katsuyama and his colleagues seek to educate

² Siegel's description of HFT firms' revenues as a tax on trading can also be thought of as a transaction cost to investors because transaction costs include the costs incurred by investors to participate in the market. These costs include brokers' commissions and spreads as well as any taxes on a transaction. While governments are typically the institutions that impose taxes, Siegel takes the perspective that HFT firms are extracting a small tax akin to a Tobin tax (i.e., a tax that was developed by economist James Tobin to penalize short-term currency speculation and thereby stabilize a given country's currency) in order to reduce excessive trading on information other than real knowledge.

³ Market liquidity is the ability of an asset to be sold quickly without causing significant price movement. Since HFT makes the bid-ask spread smaller, this smaller difference in price between the highest price a buyer is willing to pay and the lowest price for which a seller is willing to sell results in more active trading (i.e., increased market liquidity).

investors so that they can trust in the financial markets again. Lewis' book gives an example of a modern-day David in a world of Goliaths, providing students and faculty alike with an opportunity to explore perceptions of ethics, rather than instinctively accepting Lewis' perspective as truth. Furthermore, *Flash Boys* is written in highly enthralling and entertaining language that is sure to keep students interested from start to finish.

This book also provides an opportunity for faculty to encourage students to think outside the confines of what they've read and to critically evaluate an author's assertions. There are two sides to every story and though Lewis describes a world full of evil, covert HFT firms, and casts Katsuyama as a hero of the people, it is possible that HFT firms provide benefits to the market. Faculty can have students participate in a mock trial in which the plaintiff is the SEC and the defendant is the president of an HFT firm being sued for harming investors. Some students can be assigned the plaintiff's position, while other students can be assigned the defendant's position. Ultimately, all students should come to appreciate the different perspectives about whether HFT firms help the market by creating liquidity or harm the markets by unfairly taking advantage of unsuspecting investors. The value of such an exercise is that all students must anticipate the other side's arguments to be effective in the "courtroom." Because Lewis's account is an early look at HFT practices, students will have to seek out other sources in order to form compelling arguments.

Relevance to Academics and Investors: Financial Models

Flash Boys describes how stock prices fluctuate because HFT intermediaries are speculating about the demand and supply in the very short term based on information glimpsed before the rest of the market, which may not reflect sustainable long-term value. If this is the case, then financial archival accounting researchers should consider the implication of HFT on their models. If the problem of firm valuation being set by the market and not reflecting "fair value" is systemic, affecting all stocks throughout the market randomly, then it should not be statistically associated with any particular measure. However, it is possible that HFT firms will trade frequently traded stocks, making these stocks trade even more frequently. Financial archival researchers examining research questions about market pricing should consider including a variable in their model that accounts for the exchange in which trades are predominantly executed for a given stock. Even so, accounting for the exchange may not address the problem that traders initiate their trades from different distances relative to the exchanges. Even if financial archival researchers could include average time from the initiation of a trade to fulfillment of the trade as a variable in their market price models, this information is probably impossible to acquire because it is proprietary to the firms executing the trades. In any event, capital markets researchers cannot and should not ignore this new phenomenon without first determining its potential effects on their models.

Lewis' book is a must read for investors who have faithfully believed the stock market is a level playing field, trusting that traders are working in their best interest. While traders are agents for principal investors, *Flash Boys* provides examples of conflicts of interest that offer incentives for traders to act contrary to the benefit of the investors they serve. One solution described in Lewis' book is for investors to trade on Katsuyama's exchange, the IEX. The innovation of this exchange is that it adds a 700 microsecond delay to trades and has strategies intended to ensure the trustworthiness of the exchange, thereby limiting traders' ability to front-run orders.

Former hedge-fund manager Andy Kessler (2014) suggests one quick response to the HFT problem described in Lewis' book: to change Reg. NMS Rule 611 from reading 'best price' to 'best execution.' The example he gives is one in which an investor wants to buy 100,000 shares and there is a 'best price' offer to buy 100 shares at \$20 each. Trading on this 'best price' allows an HFT firm to use the knowledge of the investor's trade to bump the price of that stock to \$20.10 for the remaining 90,000 shares the investor wants to buy. An offer of 100,000 shares at \$20.05 would be

the ‘best execution’ in this case. Of course, with a rule change to ‘best execution,’ much more judgment will be involved in determining what ‘best execution’ really means in different situations.

CONCLUSION

The rapid speed with which technology is evolving potentially has both functional and dysfunctional effects. *Flash Boys: A Wall Street Revolt* explores effects of HFT on stock markets, and how speed can allow those with access a new opportunity to profit. In particular, students will learn how technology can be used to take advantage of private information. Students may be inspired and influenced by Katsuyama and his associates’ actions, seeing him as a courageous hero, fighting corruption head on. Students will also be challenged to critically assess whether the markets are corrupt and rigged, as described by Lewis, or whether HFT firms’ actions are merely the result of innovation and technology. Scholars should consider investigating the ethical ramifications of the rapid evolution of technology. Do the costs exceed the benefits with respect to HFT? Additionally, scholars can investigate whether an SEC rule change as described by Kessler would help overcome the HFT ‘problem’. Overall, *Flash Boys* is a fascinating and thought provoking book that appeals to a broad spectrum of readers, especially to individuals interested in accounting information systems, financial accounting, technology, and capital markets research.

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