Flash Boys and Cassandras
Debates on the Regulation of High Frequency Trading are Revived

Róisín Áine Costello

Róisín Áine Costello holds an LLB from Trinity College Dublin, an MPM from the Institut d'Etudes politiques de Paris and is currently an LLM Candidate & Fellow of International Economic Law, Georgetown University Law Center. In this letter she explores the current discourse on High Frequency Trading.

In the last twenty years the stock market began a significant shift as a combination of new technology and regulations led to the emergence of high frequency trading (HFT). Through the use of complex algorithms and high-speed internet connections, traders can buy and sell in fractions of seconds, potentially making an exceptionally high number of small profits, sufficiently fast so as to result in significant overall gains.[1] These algorithmic trading systems require little or no human involvement and rely on computerised quantitative models to execute thousands of orders per second.[2] The advances in trading technologies which have facilitated the rise of HFT have also accelerated the speed at which shocks can travel through the financial system at a pace that far outstrips the capacity of regulatory reaction.[3]

Goldstein writing in the New York Times noted, by 2009, HFT yielded billions of dollars a year and accounted for some 60 percent of US stock trades.[4] Although the rise of HFT is regularly presented as a story concerning the rapid advancement of the technology, it is contended that the rise of HFT is, in fact, an unintended consequences of regulation. During the 1990s and early 2000s, a series of Securities and Exchange Commission (SEC) rules were proposed with the aim of aiding individual investors by requiring stock exchanges to compete through prohibiting exchanges from hoarding orders (including the Securities and Exchange Commission, Proposed Rule on the Elimination of Flash Order Exception from Rule 602 of Regulation National Market System).[5] Though the proposal was designed to allow easier matching of buyers and sellers, in fact it resulted in significant complications as the traditional stock market evolved into a complex web of over twelve separate exchanges which now operate, in many ways, as competing technology companies, in which rooms full of computers match buyers and sellers.[6] This proliferation has forced exchanges to compete more aggressively, and as the profitability of exchanges is based partially on volume, HFT has emerged and grown in importance.

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1 Jacob Goldstein, 'It's The Economy: Putting a Speed Limit on the Stock Market' *The New York Times* (8 October 2013).

2 Commodity Futures Trading Commission & Security and Exchange Commission, *Findings Regarding The Market Events Of May 6, 2010*, 14 <http://www.sec.gov/news/studies/2010/marketevents-report.pdf> accessed 16 November 2014.

3 Adam J Levitin, 'In Defense of Bailouts' (2011) 99 Georgetown University Law Journal 435, 461,

4 Goldstein (n 1).

5 Gary Shorter and Rena S Miller 'High Frequency Trading: Background Concerns and Regulatory Developments' Congressional Research Service (2014) p 31 <http://fas.org/sgp/crs/misc/R43608.pdf> accessed 16 November 2014.

6 Goldstein (n 1).

In particular, this proliferation has forced exchanges to compete more aggressively, and as the profitability of exchanges is based partially on volume HFT has emerged and grown in importance. Exchanges also began renting space next to the computers powering the exchanges, and, as it takes time for information to travel over networks, those traders whose computers were closest to the exchange's computer would exchange information fractions of a second ahead of trader's located further away - fractions of seconds that could mean billions of dollars.[7]

In certain quarters this escalating competitiveness as well as the relative lack of attention granted to HFT is blamed for exacerbating and indeed causing, the 2010 'flash crash', during which the Dow plummeted 1,000 points in just a few minutes.[8] HFT was also at the centre of a scandal involving Thomson Reuters, who were revealed to have sold key market data to high-paying clients two seconds before the markets and the general public received the information thus allowing them, in HFT terms, a significant trading advantage.[9] Yet it is only in the last 12 months that regulators like Eric Schneiderman, New York's Attorney General have revived the long-running debate surrounding HFT by highlighting the connections between stock exchanges and trading companies - a relationship Schneider has referred to as 'Insider Trading 2.0'.[10] Of even greater concern to regulators is whether HFT has the potential to increase the volatility of equity markets and contribute to a reduction in investor confidence. Normal accident theory holds no system of oversight can completely exclude the possibility of periodic crises yet HFT appears particularly volatile. In 2011, the Investment Industry Regulatory Organisation of Canada began a crackdown on the 'manipulative and deceptive' trading practices associated with HFT.[11]

The most evident and immediate challenge identified by the Organisation for those who would seek to regulate HFT is its preponderance to crash suddenly and, often without warning, causing dives (in confidence and significant losses for traders involved as evidenced, most recently, by the August 2013 crash of the NASDAQ. Indeed the 'flash crash', coupled with a number of stock market failures gives this concern considerable weight. In 2012 Knight Capital lost some $440 million after flawed software flooded the market with orders forcing Knight to unload shares at a significant loss and causing

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[7] Goldstein (n 1).

[8] See Steven Russolillo, 'Flash Crash, Three Years Later: What Have We Learned?' (Wall Street Journal Blog, 6 May 2013) <http://blogs.wsj.com/moneybeat/2013/05/06/flash-crash-three-years-later-what-have-we-learned/) accessed 16 November 2014.

[9] Ibid. See also Michael Chlistalla 'High Frequency Trading; Better Than its Reputation?' (Deutsche Bank Research Brief 2011); Adam Sussman, Larry Tabb, Robert Iati, 'US Equity High Frequency Trading: Strategies, Sizing and Market Structure' (TABB Group Massachusetts 2009).

[10] Madison Marriage 'The New York Attorney General who took on BlackRock' *Financial Times* (26 January 2014) <http://www.ft.com/intl/cms/s/0/d3c9d0e6-843c-11e3-9903-00144feab7de.html#axzz3IsSIjatM> accessed 16 November 2014.

[11] Rob Iati 'The Real Story of Software Trading Espionage' (Wall Street and Technology Blog, 10 July 2009) <http://www.wallstreetandtech.com/trading-technology/the-real-story-of-trading-software-espionage/a/d-id/1262125?> accessed 16 November 2014.

the firm to face near bankruptcy before being bought by Getco Holding Co.[12] HFT has entered the headlines in 2014 once more with the publication of 'Flash Boys' by Michael Lewis which charts the 'rigged' nature of the market. In the weeks before the book's publication Goldman Sachs suddenly threw its weight behind HFT market reforms following years of heavy investment by the firm in HFT.

In Flash Boys Lewis highlights the case of Sergey Aleynikov, a high-frequency trading programmer at Goldman who, after leaving the firm, was arrested and charged by the FBI with stealing computer code he had developed for Goldman while an employee there. Goldman claimed the code at issue could be used to 'manipulate markets in unfair ways' when placed in the wrong hands. As Lewis notes, the question which such claims raise but which remain unanswered is, if the code had such potentials, exactly what potential manipulations were Goldman using it to achieve.

If the code used for HFT is indeed so potentially efficacious in its markets effects it is, surely, time to listen to the Cassandras among us who have been decrying its destructive potential. Goldman through its conspicuous throwing of its weight behind efforts to reform and regulate HFT may in fact be seeking to pass their flash boys off as Cassandras and thus maintain their standing even as the HFT landscape shifts under the watchful eyes of regulators. Whatever Goldman's motivations the outcome seems to be becoming clearer - HFT is belatedly following the broader pattern which has characterised post-crisis markets which, at least in theory, privileges regulatory foresight over flash in the pan market forces.

[12] Nina Mehta 'Knight $440 Million Loss Sealed by Rules on Canceling Trades' (Bloomberg, 14 August 2012) <http://www.bloomberg.com/news/2012-08-14/knight-440-million-loss-sealed-by-new-rules-on-canceling-trades.html> accessed 16 November 2014.