TRANSCRIPTION OF THE FILM

„ HIGH FREQUENCY TRADING „

a film by www.trickvogel.com

on behalf of the WEED

www.weed-online.org
WHAT IS HIGH FREQUENCY TRADING?

This is what the stock market was once like: a large room with monitors on the wall, showing continually changing columns of numbers. On the floor, a hectic crowd of traders and a babble of voices, from which one repeatedly heard the shouts “buy!” and “sell!”

But this picture has changed – the room is still there, along with the monitors, but the crowd has become much smaller. Quietly humming computers have taken their place.

The traders who monitor and control the computers are either sitting at home or in the office. These computers work much faster, never go on holiday – and rarely require a person to run them.

These computers are equipped with trading programs – based on mathematical formulas, known as algorithms. Instead of the traders, it is these programs that evaluate stock market rates – and are able to buy and sell stocks, either fully or semi-automatically.¹

Some of these trading programs only perform simple commands, for example: “When the price of grain falls below a certain value, then buy x number of grain stocks.”

Other programs can follow several commands at once and are relatively complicated.

But they are nothing compared to custom-built, high-frequency trading computers.

The trading programs installed on these computers can independently pursue complex strategies with incredible speed.

These programs compete with and battle one another. To ensure they don’t run the risk of losing, they always have to be faster, more flexible and more independent.\(^2\)

What was previously traded within days, hours and minutes is now bought and sold within seconds, milliseconds and microseconds. High-frequency traders only account for a small part of all traders, yet are responsible for about two-thirds of all stock market transactions.\(^3\)

The high-frequency traders’ basic strategy is very simple: trade as much and as quickly as possible. The profit margin on each transaction is frequently quite small, but these small amounts add up to billions due to mass and velocity.\(^4\)

To make this work, the high-frequency trading programs must always be a split second faster than the others. And that’s only possible when they are close to the stock market – the shorter the cable, the faster information can be transmitted. It’s all about milliseconds.\(^5\)

For example, the buying price for a certain commodity rises minimally. Since the high-frequency trading programs can process this information before other trading programs, they have the opportunity to be the first to respond to the price trend. Before the trend ends, the commodities are sold again – at a minimal profit per share.\(^6\)

\(^2\) [http://www.zeit.de/2014/16/hochfrequenzhandel-algorithmen-boerse](http://www.zeit.de/2014/16/hochfrequenzhandel-algorithmen-boerse)


High-frequency trading may have both advantages and disadvantages for the markets.\(^7\)

Many market researchers believe that high-frequency trading increases so-called liquidity. A market has a high level of liquidity when a trading partner can be found for every offer. However, high-frequency traders work especially well in markets that are already highly liquid. What’s more, they are not obliged to always act as trading partners. In a crisis situation, when they are most required, high-frequency traders pull back from the market and this benefit is lost.\(^8\)

Some also think that high-frequency trading facilitates pricing while reducing price volatility. However, these assertions are highly controversial, as some high-frequency trading mechanisms have the opposite effect.\(^9\)

Disadvantages include the fact that normal traders cannot match the speed of the high-frequency traders, because firstly, not everyone can afford to rent space close to the market; and secondly, they cannot always pay for the specially-programmed high-frequency trading algorithms.\(^10\)

Due to more direct proximity to the stock market, the high-frequency traders have a clear information edge. This means that all classic dealers lose out to high-frequency trading.\(^11\)

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\(^7\) [www.bundesbank.de](http://www.bundesbank.de)\(^8\) [www.wiwo.de](http://www.wiwo.de)\(^9\) [www.deutsche-boerse.com](http://www.deutsche-boerse.com)\(^10\) [www.faz.net](http://www.faz.net)\(^11\) [www.zeit.de](http://www.zeit.de)
Effectively, every classic trader not only pays the explicit exchange fees, but also an implicit fee for high-frequency trading, because this type of trading is interposed between most stock market transactions.\(^\text{12}\)

Another drawback is that the novel high speed and the lack of regulation are often exploited by high-frequency traders to manipulate the markets and deceive other market participants.\(^\text{13}\)

One example here: it is difficult and costly to continually stay one step ahead. Instead, it is easier to slow down all the other market participants.

This happens through so-called “quote stuffing”. In this scenario, a trading program makes thousands of small, unimportant offers, thereby producing a flood of information. In filtering out the unimportant information, other programs lose valuable milliseconds and respond too late to the interesting offers.\(^\text{14}\)

Another manipulation technique is called “spoofing”. For example, a trading program will generate a number of over-priced purchase offers, for example. Thanks to the extreme speed, these over-priced offers can be cancelled immediately before anyone purchases them. But as these phantom offers are nevertheless seen, this creates the illusion that a number of dealers are interested in buying the offers, and that prices for these goods will soon rise significantly. Other traders react to this illusion, ensuring that the price actually does rise. The spoofer can now use previously acquired options – bought at an unmanipulated price – to make significant profits.\(^\text{15}\)


[http://www.nanex.net/aqck2/4060.html](http://www.nanex.net/aqck2/4060.html)

[http://www.nanex.net/aqck/2950.html](http://www.nanex.net/aqck/2950.html)

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Computer-controlled high-speed trading also comes with technical risks.

Trading algorithm programmers say that due to the extreme complexity of the trading environment and the algorithms themselves, they are no longer able to track everything the programs do. And, of course, these programs are never completely error-free.\(^\text{16}\)

This leads to problems in the interaction of various trading programs. As with human dealers, unpredictable situations can arise; for example when two or more programs repeatedly react to one another and subsequently get trapped in a “loop”. The problem here is the speed with which this happens. Only special programs would be able to react quickly enough, as humans are much too slow to become aware of the threat, assess it and intervene.\(^\text{17}\)

These risks and manipulations are detrimental to the vast majority of market participants and cannot be compensated for by the benefits. In addition to the already unfair advantages for high-frequency traders, all these problems can have fatal consequences on the real economy. They played a large role in the stock market crashes such the first “flash crash” of 2010, when the U.S. stock market collapsed within a few minutes in a way never seen before. Since then, “mini-flash crashes” have repeatedly been observed in every stock exchange.\(^\text{18}\)

Despite claims of immunity to such a problem, the german stock market experienced its first real flash crash in early 2014.\(^\text{19}\)


Unfortunately, technical progress with computerised trading has led to a wide range of risks and possibilities of manipulation, which are predominantly exploited by high-frequency traders.

In order to counter these, the following reforms of European stock exchange acts were adopted in the spring of 2014\(^20\):

The introduction of automated trading stops:
If flash crashes occur, trading will be interrupted briefly. Flash crashes cannot be prevented like this, but the damages can at least be limited.\(^21\)

The increase of the so-called “tick size”:
This is the minimum amount by which a market price can change. This represents an indirect regulation of high-frequency trading, as price changes would occur less frequently.

The following regulations were unfortunately left open by the stock markets and are not sufficiently anchored in law. The stock exchanges thus find themselves in a conflict of interest, as they are mainly benefiting from high-frequency trading.

To begin with, the stock markets are being directed to make privileged electronic connections to stock exchange computers “fair and transparent” for all market participants\(^22\). However, as long as slower and faster connections exist, this will lead to structural inequality on the markets, penalising those traders who only have access to a slower connection. Quote stuffing and spoofing will still remain possible. Privileged connections to exchange computers, so-called co-locations, should be eliminated in order to restore equal opportunities for all market participants.

\(^20\) [http://ec.europa.eu/internal_market/securities/isd/mifid2/index_de.htm](http://ec.europa.eu/internal_market/securities/isd/mifid2/index_de.htm)
Likewise, stock exchange operators have unfortunately only been asked, but are not obliged, to prevent the mass occurrence of “phantom offers”.23

There are two options for dealing with this: either by introducing limits on offer cancellations, or introducing a minimum holding period for offers. The European Parliament had proposed 500 milliseconds as the minimum retention period, but unfortunately was unsuccessful in this initiative.

Embedding one of these options in law would be especially advantageous, as it would stringently prevent quote-stuffing and, in particular, spoofing, while also promoting equal opportunities for all market participants, facilitating pricing and preventing flash crashes.24

Lastly, there are two further ways to regulate high-frequency trading:

The enforcement of a minimum holding period for securities would mean that it would not be possible to immediately re-sell shares that have just been acquired. This would prevent high-frequency traders from interposing themselves on every transaction conducted.

Ultimately, the introduction of the much-vaunted financial transaction tax would make high-frequency trading less lucrative, and – in all likelihood – offset the social losses on the financial markets through tax revenues.

The advantages of high-frequency trading are largely overestimated, while the disadvantages are systematically swept under the carpet. It’s not about preventing computer-assisted trading, but rather preventing extreme forms of trading that are harmful to society. To ensure that innovations and technical developments on the financial markets are not abused, we should ensure that they are accompanied by the appropriate legislative reforms.

Form an independent opinion and check diverse sources.

**High frequency trading additional links and sources:**

In the following you’ll find links to websites with studies, articles, interviews, documentaries, analyses, talks and more on the subject of high frequency trading.

Webpage from finance-watch on the subject of high frequency trading (english) [http://www.finance-watch.org/hot-topics/blog/278-hft-blog](http://www.finance-watch.org/hot-topics/blog/278-hft-blog)

Homepage of the leading HFT-analysts Nanex with research findings, articles, interviews, current events and more (english) [http://www.nanex.net/NxResearch/](http://www.nanex.net/NxResearch/)

Webpage of the Federal Financial Supervisory Authority (german BaFin) about HFT (english)
http://www.bafin.de/EN/Supervision/StockExchangesMarkets/HighFrequencyTrading/high_frequency_trading_artikel.html;jsessionid=DF208B333A3742BE85F01F446D206CE2.1_cid290

A talk about HFT from Dr Joachim Nagel, Member of the Executive Board of the Deutsche Bundesbank (english)
http://www.bundesbank.de/Redaktion/EN/Reden/2012/2012_07_04_nagel_hft_und_martkimplikationen.html

Homepage from Haim Bodek, HFT whistleblower and electronic trader (english)
http://haimbodek.com/

Eight-article series about HFT from wallstreet-online (german)
http://www.wallstreet-online.de/nachricht/6410592-high-frequency-trading-hft-teil-1-entstehung
http://www.wallstreet-online.de/nachricht/6420900-high-frequency-trading-hft-teil-2-entstehung
http://www.wallstreet-online.de/nachricht/6429914-high-frequency-trading-hft-teil-3-techniken-hft-fonds-vwap-iceberg-orders
http://www.wallstreet-online.de/nachricht/6433390-high-frequency-trading-hft-teil-4-techniken-hft-fonds-sniffer-algorithmus
http://www.wallstreet-online.de/nachricht/6462964-high-frequency-trading-hft-teil-6-flash-orders-schnelligkeit-trumpf
http://www.wallstreet-online.de/nachricht/6471482-high-frequency-trading-hft-teil-7-quote-stuffing-15-000-orders-3-sekunden
http://www.wallstreet-online.de/nachricht/6483226-high-frequency-trading-hft-teil-8-schaden-anleger

Der Spiegel "Umstrittene Hochfrequenz-Deals: Die geheime Welt der High-Speed-Händler" (german)
“The Wall Street Code” Interview with HFT-Whistleblower Haim Bodek and HFT-Documentary (english):

https://www.youtube.com/watch?v=GEAGdwHXfLQ

Nanex analysis of the dax-futures flash-crashes from 6-feb-2014 and 17-apr-2014 (english)

http://www.nanex.net/aqck2/4557.html
http://www.nanex.net/aqck2/4167.html

pdf from financialworld UK „The flip side: high frequency trading“ (english)


pdf from Universität Frankfurt „Geld rast um die Welt - Der Wertpapierhandel im 21. Jahrhundert“ (german)

http://www.forschung-frankfurt.uni-frankfurt.de/43022007/Gomber_FoFra-2012_02_36-40.pdf

New York Times article about the founding of a new and fair stock exchange (IEX) (english)


Study about HFT from the Goethe-Universität Frankfurt a.M. (english)


Analysis from the AFM (Netherlands Authority for the Financial Markets) about HFT (english)

Article from the Börsen-Zeitung „Märkte im Geschwindigkeitswahn“ (german)

Study from the Universität Potsdam: Johannes Gomolka: „Algorithmic Trading, Analyse von computergesteuerten Prozessen im Wertpapierhandel unter Verwendung der Multifaktorenregression“ (german):
http://d-nb.info/1014245400/34

pdf about HFT from The International Organization of Securities Commissions (IOSCO) (english)

pdf about HFT from the WallstreetJournal (english)

Nanex shows how the number of HFT-Quotes always adapts to the maximum of the respective stock exchanges (NYSE, AMEX, and NYSE-Arca between 2008 and 2012) (english)
http://www.nanex.net/aqck/2817.html

Video of Amazon-shares getting traded 100.000/sec
https://www.youtube.com/watch?v=-DvwrmvGdpY&feature=youtu.be

10.000 fake orders and liquidity evaporation (english)
http://www.nanex.net/aqck2/4401.html

TED-Talks about computerized trading, algorithms and HFT (english)
http://www.youtube.com/watch?v=ENWVRcMGDoU
http://www.youtube.com/watch?v=V43a-KxLFcg
http://www.youtube.com/watch?v=4dEzNMx94s0