



Spotlight on High Frequency Trading

High frequency trading has one of the most-discussed topics in the equity market over the past few months. As with most controversial issues in the business, typical outlets for information become so saturated with different perspectives, angles, and agendas from individuals with different depths of knowledge that the issue has become cloudier than when discussion began. In this Woodbine Opinion, we clarify certain definitional ambiguities around high frequency trading and briefly examine its impact on the market.

High frequency trading strategies generate returns through the rapid turnover of many small positions in one or more financial instruments. These positions may be concentrated in a single instrument or spread across multiple instruments (e.g., securities, foreign exchange, futures). In their basic form, strategies take advantage of market inefficiencies, sending waves of small marketable orders to trade into or out of positions on detecting minute changes in markets, instruments, or information. By locking in small profits across a very large number of trades, these strategies generate substantial returns for their backers.

Many types of high frequency strategies exist. Some of the more basic categories include index arbitrage, event arbitrage, and information arbitrage. Index arbitrage strategies profit by taking advantage of mispricing between index futures and equities underlying the index. Event arbitrage strategies benefit by capturing returns from mispricing between securities of companies involved in major corporate events (merger, divestiture, etc.). Information arbitrage strategies profit by acquiring value-oriented information and incorporating it into trading decisions before that information is fully factored into price across instruments and/or geographies. “Electronic market making” as our friends at Rosenblatt Securities speaks of it, involves strategies that consistently trade on both sides of the market with the objective of maximizing net rebate. Then there are stealthy “black box” strategies, truly secret proprietary strategies often comprised of multi-factor models designed to predict price and market movements.

High frequency strategies are backed by proprietary capital. Users of these strategies include a number of hedge funds, broker/dealer proprietary trading desks, and a handful of other entities. In the case of broker/dealers, like early algorithms, they are not made available for use by the firm’s client base.

High frequency trading is not “program trading” as we normally think of this business. Like program trading, high frequency strategies use technology and algorithms. On an agency basis program trades often involve a human trader leveraged by technology and often algorithms shift capital into or out of specific security positions on behalf of a client. On a principal basis, the same human/technology set up exists though the trader may be moving into or out of positions based on a particular strategy or to manage broader risk-based needs of the firm’s book. Program trading may be high speed, but “low frequency”.

High Frequency Trading is not “algorithmic trading”. While algorithms are central to high frequency operations, algorithmic trading involves an automated means to enter or exit positions subject to a chosen trading strategy, transaction cost considerations and risk appetite. It does not involve repetitive, high frequency turnover of positions.



High frequency trading has given rise to discussion related topics such as flash orders and technology co-location. These are really topics in themselves. They are not unique to, but have largely become controversial in connection with, their relationship to high frequency trading. Flash orders and co-location have been discussed so often in context with high frequency trading that they are now only almost exclusively associated with the subject.

Now defined, the controversy over high frequency strategies can be discussed in two contexts:

- **Are high frequency strategies “fair”?** Do aspects of high frequency trading, such as high-powered technology and hardware co-location with execution venues, provide advantages unavailable to or detrimental to other market participants?
- **Are high frequency strategies good for the market?** Do these strategies make overall market more stable and efficient?

Are high frequency strategies fair? “Fair” is ambiguous because it requires a value judgment. Values differ among individuals. Determining fairness depends largely on one’s view of the role of the market and the degree to which market participants should or should not be allowed to freely innovate, act, and generate returns. There are a range of different views on the topic. We believe that innovation should be fostered and rewarded to the point that a product or activity leads to a divergence from the historically accepted premise of the market.

We believe that high frequency innovators have every right to their profits so long as their strategies do not detract from the market’s efficiency in the transfer of capital between businesses and investors and the transfer of stock among investors. We do not think that high frequency strategies have adversely impacted the primary market. We do believe that information arbitrage strategies have adversely impacted trade quality of trading in the secondary market, causing value-based disparities in prices and should be restricted.

Are high frequency strategies good for the market? We believe that many high frequency strategies have little to significant effect on market operations. Their operation simply adds another type of liquidity to the market. They may contribute to market volatility and impact price but these aspects must be studied in further detail.

Strategies that arbitrage information to the detriment of displayed (largely investor-backed) limit orders work to the detriment of the market. This, in part, is due to the secretive nature of high frequency strategies and lumping together all types of strategies into the same group. The perceived rapid increase of high frequency trading, the lack of clarity among different strategies, and the fear of being “picked off” provide strong disincentives for the very firms that need to trade into or out of positions not to display liquidity. The following example illustrates how an information arbitrage strategy can be detrimental to displayed liquidity:

Favorable news about a security is released that would increase its fundamental value. A high frequency strategy receives new publicly available news ahead of other market participants based on superior technology and low latency connections and, in anticipation of a price increase, initiates a series of marketable buy orders at the current price. The buys are executed before the selling counterparties

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receive the news and/or can adjust their limit prices. Those counterparties have sold at prices below the stock's newly established fundamental value.

The high frequency strategy subsequently sells the newly acquired positions at higher prices, thereby locking in profits, once buyers have incorporated the news into their valuation. Since trading is a "zero sum game", returns that would have gone to sellers in the absence of the high frequency strategy instead are captured by the strategy.

The reverse occurs in the case of negative news with strategies shorting into a declining market at prices greater than fundamental value and covering when securities reach the new value.

While simplistic, the illustration demonstrates our point. Research we have undertaken for a soon-to-be released report supports our view that adverse selection in relation to displayed limit orders has increased over the past 6 months in the major trading venues in conjunction with a rise use of high frequency strategies.

In summary, in this Woodbine Opinion we have clarified some definitional aspects as to what high frequency trading is and is not. Speaking in a common language is important when discussing critical topics related to the financial markets. Often, lack of clarity around a topic can lead to unfavorable changes in practices, mandated or otherwise. We at Woodbine Associates also credit high frequency trading innovators for the advancements they have brought to trading practice. While, in our view, the majority of high frequency trading does not contribute significantly to the financial markets, it doesn't harm them either. However, some strategies, specifically those designed to front run investors in a particular instrument, work against the underpinnings of market operations by eroding investor confidence. These harmful strategies must be curtailed.

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