Securities Trading Report

In the report they define low latency trading strategies and what companies do to decrease their latencies. They want to see if low-latency activity is impacted by the high frequency trading on the market environment. They use NASDAQ estimates of high frequency trading. Analysis shows that increased low-latency trades improve traditional market quality measures. Our findings suggest that given the current market structure, low latency trades do not impact the returns of long-term investors.

Latency is first defined as the time to learn about an event, generate a response, and have the exchange act on the response. Exchanges and large firms have been heavily investing in upgrading their systems to reduce the time it takes to send information to customers as well as to handle customer orders. Lower latency trades are beneficial to traditional benchmarks of market quality, characterized by high fragmentation and a wide usage of proprietary algorithms. This means that these firms also use algorithmic processes to determine whether to buy or sell certain stocks, and can evaluate thousands of stocks within a second, faster than any human could. Data is collected from NASDAQ’s system that provide real time orders and executions. Each message is also stamped to the millisecond which shows the latency and trading process of the NASDAQ book. Firms know about the increased latency when they trade a large volume of securities or futures at a time, so the algorithm develops a method where it distributes execution over a time frame to maintain the average price that was given from the algorithm. They also measure how fast these firms’ response by tracking news that may lead to an immediate trade.

Firms also submit a lot of orders that are later cancelled. And this shows the algorithms of these firms reacting to other people’s moves. This is also due to them seeing if the price has dropped or risen, providing a better advantage and return if they buy or trade the security and a different price. They have also shown that the daily average return of these trading firms is around 0.1% on an average day, meaning if compounded by the 270 working days in a year, they can expect returns of around 128% per year if the market is in a normal condition. If the market is in a bad condition such as in an economic downturn, their average return is -0.5%. In table 3, they also noted that there was a higher volume of strategic runs and this was probably due to the economic downturn, and the investors and algorithms being unsure about certain stocks, making more strategic runs and taking their money out of certain companies.

They also found that there are no clear and obvious candidates for instrument variables. Most instruments are built with the same intention in mine, and the construction of instruments might influence the latency. The main variable that was affecting latency was the distance of the agency and the server, as this is something you can’t really reduce anymore. They bring up an example of having a far server location such as Chicago when you are living in New York. The minimum time it takes for information to travel there and back is 8 milliseconds, and this is at the speed of light. If information can be compressed and transferred that fast, it would take a lot of energy and maybe the costs are to high to justify the agencies to implement even lower frequencies.

They found how a measure of low-latency activity using publicly available data can be used as a proxy for high-frequency trading. Second, we study the impact that low-latency activity has on several market dimensions during normal trading conditions and a declining condition, heightened economic uncertainty. Low latency activity has a positive effect on the market. Low Latency trading is essentially seeing how many different algorithms would react with each other, constituting a fundamental change from the way stock markets operated even a few years ago. A few problems that are proposed are the fairness of trades, market manipulation, and the systematic risks due to the complex and rapid speed of trading activities.

When electronic trading was first adopted, they envision a scenario where all traders would enjoy equal access. They believe that guaranteeing equal access to the stock market in today’s day and age would be physically impossible. The first impediment is how far a person lives away. Evidence shows that some players are 2-3 milliseconds faster, and that difference is due to the location of where they executed the trade. Unless markets change from continuous to periodic, some trades will always have lower latency than others, and they conclude that low-latency activity do not determent long-term investors in the market structure for U.S. equities.

For a future report I would be interested in knowing if there is a price inefficiency due to low latency trading immediately after the trades happen. This is because they only showed that in the long term, there does not seem to be a price inefficiency in what they are doing. They can also provide suggestions on regulations of a fair market if they decide that low-latency trading is unfair, and it is physically impossible to provide a fair market for all users. Common suggestions might be thing such as having a delay to ensure all trades happen within the same amount of time. Another point that they can bring up is machine learning and artificial intelligence and how this might disrupt the traditional algorithmic trading processes that they have, as the computers can take input on how they are doing, and adjust their algorithms accordingly to increase returns and accuracy.