An ASX
Thought Leadership
Discussion

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ALGO TRADING COMES OF AGE

Algorithmic or, as it's more commonly known, algo trading has become a standard feature of markets. Here, we explore what it is, looking at its role and impact on market structure and prices.

Alexandra Cain, moderator, *Listed@ASX*: what is algo trading?

Carole Comerton-Forde, professor of finance, University of NSW: It's any automated system with predefined rules and logic around how to trade. It reflects almost all trading. It's a normal tool of business. It used to be predominantly used by the sell side, but now buy-side firms are bringing these tools in-house.

Richard Atkins, general manager, trading and market access, ASX: These tools have been developed in response to increased complexity in the market structure and increased risk in execution.

***Listed@ASX*: Where are things at in algo trading?**

Steve Hammerton, Australian head of cash equities execution, UBS: It's a tool every client uses. There has been an evolution over the last decade, and every broker has built out its offering. Now, it's considered a standard way of executing trades. Some clients do it themselves, some outsource it to brokers and there are other vendors who offer execution services as well. Everybody is using it.

Photography by Christopher Pearce









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***Listed@ASX*: How has algo trading evolved over time?**

Steve: The first algos used relatively static pieces of data. They looked at what was happening in the stock historically – the volume and bid offer profiles and volatility. This created a path the algorithm would follow, based on simple instructions such as order quantity, price and volume.

Algos didn't react to anything extraneous; they followed a path. Traders could stop or start them, or change basic parameters. Now, it's all about real time data analysis. Algos adapt to what's going on in the market in other asset classes and data feeds that change their behaviour or bias.

In a very simple example, an algo might take a feed from a cross-currency pair, the futures market or a news feed, and ascertain whether sentiment is positive or negative on the market or stock and make a decision to execute a trade.

Carole: Large orders can be split into one-minute buckets through the day, which has in part driven the decrease in order size over the last 10 years.

Steve: There's a barbell approach. Order sizes have reduced, but we've also seen massive growth in block trading. That's become a very reliable way to move large amounts of stock. Algo trading has also broadened the investible universe, with opportunities to trade across the All Ordinaries. Clients are able to trade these stocks because of the algo tools we've given them. These are long-term investors who can enter positions passively and gradually, that they will hold, which creates liquidity in those stocks. That liquidity enables other clients to invest, transferring liquidity outside the ASX 200 into small cap funds.

***Listed@ASX*: What's the significance of all this for listed companies?**

Steve: It doesn't fundamentally change anything. At the end of the day, the composition of the market is the same. You've got retail investors, long-term investors and quant investors and they're all participating in the market. Passive investors tend to use the market's close and other mechanisms to enter their positions and they don't tend to be as active in their trading. But for listed companies, this doesn't change anything.

Carole: Market-related trading costs have declined dramatically, which means it's easier and cheaper for investors to trade. Lower trading costs also reduce the cost of raising capital in markets, and that has a benefit for listed companies.

***Listed@ASX*: What's ASX's position on algo trading?**

Richard: The market needs a healthy mix of participants. In recent years, there have been more short-term traders. From a listed company's perspective, that might lead to volume which doesn't end up on the share register. But the ultimate outcome is that the market's more efficient now.

We can broadly divide the market into two categories: people that have a fundamental interest in a company and people who want to extract value from the process of trading. The interaction between the two groups is a value transfer from investors to traders. Investors who want to maximise their returns want to minimise their interactions with the people who are just interested in extracting value. This hurdle needs to be negotiated efficiently and algorithms are designed to do that. That's one of the purposes of the design, to hide footprints in the market to avoid people extracting that value.

Carole: If it were only large, fundamental investors trading, no-one would provide short-term liquidity and the cost of trading would rise. There's a lot of academic evidence algorithmic trading and even high-frequency trading does improve liquidity in the short-term.

***Listed@ASX*: This is a very technical area. Is it a problem there might not be widespread understanding about this?**

Steve: That's why it's important to rely on brokers who are in touch with the market, with dedicated desks. They're able to talk to companies about who's buying stock, whether they are a passive or long-term investor or whether they're coming from the short side. That's the broker's role. One of the things trading clients look at is liquidity in a stock, examining stock spread and volatility, to ascertain how much they can buy or sell and how long it would take to enter and exit a position. It's important listed companies understand this.

***Listed@ASX*: What does algo trading mean for passive investors?**

Steve: Most but not all passive funds track a benchmark. That's a reason why we've seen an increase in close volumes. They execute trades over a large number of stocks in a very automated fashion and that lends itself to algo trading. We design algorithms that predict the volume at the close so clients can participate with the right amount of stock. That's a growth area.

***Listed@ASX*: What does that mean for active investors?**

Carole: The balance is self-resolving. If there's too much of a shift to passive investors, opportunities to find price inefficiencies rise, so there's more opportunities for active investors.

***Listed@ASX*: What does this mean for retail investors who don't have the benefit of algorithmic trading?**

Carole: Retail investors do have the opportunity to benefit from algo trading

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"So the key difference between a lit venue and a dark pool is that in a dark pool there's no pre-trade transparency. "

because they invest in super funds, which use algo trading. They also benefit from reduced trading costs.

Steve: A lot of retail brokers offer algo tools to retail clients.

***Listed@ASX*: What's the significance of algo trading in dark and lit pools?**

Carole: So the key difference between a lit venue and a dark pool is that in a dark pool there's no pre-trade transparency. So before a trade takes place, you don't observe anything about the orders in that pool. On a lit pool like ASX you observe the full limit order book at any point in time, assuming you've got access to the live market data feed. With a dark pool, you don't have that visibility, and that's a useful tool for institutions who want to be able to trade without pre-signalling their trading intentions to the market. That's always been a part of markets. It's just made easier through an automation of that process.

Steve: We once had a dark pool because we had a vast amount of liquidity and we needed an automatic way of matching up buyers and sellers where they didn't want that order flow to be exposed, because it was very large, to the screen. But now ASX has done a really good job of providing a very successful dark venue with Centre Point, which meets our needs.

Carole: Initially dark trades could be executed at the same price as trades in the lit order book. But a change to regulation in 2013 mandated dark pool trading had to be at prices that were better than those displayed in the lit order book, which was a good change for the market. It means both sides of the trade get the benefit of being traded in the dark.

Richard: The message for listed businesses is not to be worried about dark pools. Just because trades happen in the dark doesn't mean they are bad. Dark pools are there to provide better outcomes for investors, which is healthy for listed companies.

Steve: Listed businesses should understand how much of their stock is traded in lit versus dark pools. If you look at a stock, 60 per cent might be in the order book with 40 per cent in dark venues like Centre Point, a broker dark pool or block trading. Different stocks have different compositions, so I think it's useful to understand that.

The one generalisation I would make is when looking at activity in dark pools, if the stock has a high spread, you can provide substantial price improvement and there's an advantage of going into the dark and getting a midpoint price. There's only minimal benefit with a $200 stock and greater benefit with a 70 cent stock. With the mega-large cap stocks, most investors can generally buy or sell the amount they require using the lit market. Outside of this area we do a lot of block trading because that's where investors

"Liquidity providers, market-makers or high-frequency traders are just another participant in the market."

need to find additional liquidity, and they don't want to execute a trade for five or six days when they can match liquidity here and now.

With the large banks and major resources companies, most investors can generally buy or sell the amount they require using a lit pool screen. We do a lot of block trades in dark pools below that because that's where investors need to find additional liquidity, and they don't want to execute a trade for five or six days.

Carole: There's a set of stocks priced between $2 and $5 for which the minimum tick size is set by the exchange to be one cent. So transaction costs in those stocks are high as a proportion of the price of the stock, and so in those stocks you also tend to see a lot of use of Centre Point.

Richard: Most of the liquidity in Centre Point is in stocks that are liquid, where there is a greater advantage of trading at a point at which it's not available in the lit market, generally because the spread is wide because it's a low-priced stock.

***Listed@ASX*: What should listed businesses understand about high-frequency trading, and how it might affect their stocks?**

Steve: Liquidity providers, market-makers or high-frequency traders are just another participant in the market. It's incumbent on brokers to ensure they have the tools to participate in that market and protect their investors in a trade. Markets need liquidity and high-frequency traders are very good at providing that short-term liquidity.

Richard: 'Market-maker' and 'liquidity provider' are useful euphemisms. Really, they're just traders with a different motivation. Everybody should be aware traders use those strategies and make a decision on how to trade, where to trade and with whom to trade, considering all the options. ASX offer three models of trading: the lit market, Centre Point and auctions. There's little HFT in the auctions.

Carole: If markets are about providing long-term capital to companies, you could take the view high-frequency traders are an intermediary in that process and impose costs on the market. But they also are a valuable source of short-term liquidity. They are in the market trading all day every day. If you want to avoid trading with high-frequency traders, you can use a block trade facility; trading in the auction is going to significantly reduce your prospects of trading with a high-frequency trader. But if you make that choice, you're reducing the pool of liquidity available to you, so that might not be the right strategy. It all depends how fast you want to get your trade done.

“There’s been a lot of debate and discussion around market structure over the last 10 years, but most issues have been resolved.”

That will influence who you interact with and your cost of trading.

Steve: We have a healthy ecosystem. There are some markets overseas where HFT comprises 70 per cent of the market. We’re a long way from that. There’s a healthy balance of investors in the market.

Carole: The more venues you have, the more attractive they are to high-frequency traders; there’s more opportunities for them to look across the different markets. You get paid to provide liquidity or take liquidity, and that makes short-term trading strategies more attractive. A factor that matters is whether investors are required to go to the market with the best price, or whether they can choose which market they want to go to. In Australia, institutional investors get to choose the market on which they trade. They don’t have to go to the market with the best price, whereas in the US, the national market system mandates you can only execute an order on a market which is currently displaying the best price. That makes it profitable for a high-frequency trader to be offering liquidity across many venues, and the more venues there are, the more attractive it is for them to do that. That’s a reason why high-frequency trading is less prominent in Australia.

***Listed@ASX*: Are there any emerging issues in algo trading of which listed businesses should be aware?**

Carole: There’s been a lot of debate and discussion around market structure over the last 10 years, but most issues have been resolved. The environment now is amenable to trading without having to address market structure-related challenges.

***Listed@ASX*: Any final messages for listed businesses?**

Steve: Algo trading is a tool the vast majority of clients use. Brokers are here to provide a service to help listed companies understand their shareholder register, who’s participating in their stock and provide help. Algo trading is not something they should be afraid of – the Australian marketplace is very healthy.

Richard: Algo trading is a natural evolution that deals with market complexity. It may seem remote for a listed company but we encourage companies to take an interest in how the market structure evolves. When the market structure changes, it’s useful to think about what it means for investors.

Carole: The market is well-organised and well-regulated. Companies should take an interest in understanding how algo trading influences liquidity because that’s going to influence the cost of raising capital in the market.