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Mysteries of Foreign Exchange Limit Order Books

Knowledge Transfer Network
Industrial Mathematics

Mystery #3: Limit Order Cancellations

Market participants are able to cancel their existing limit orders at any time before a match is made. Cancellations form an important part of trading strategies, as they enable market participants to update their preferences as market conditions change, and can be used in attempt to outwit other market participants by initially showing liquidity and subsequently removing it before any trades can occur.

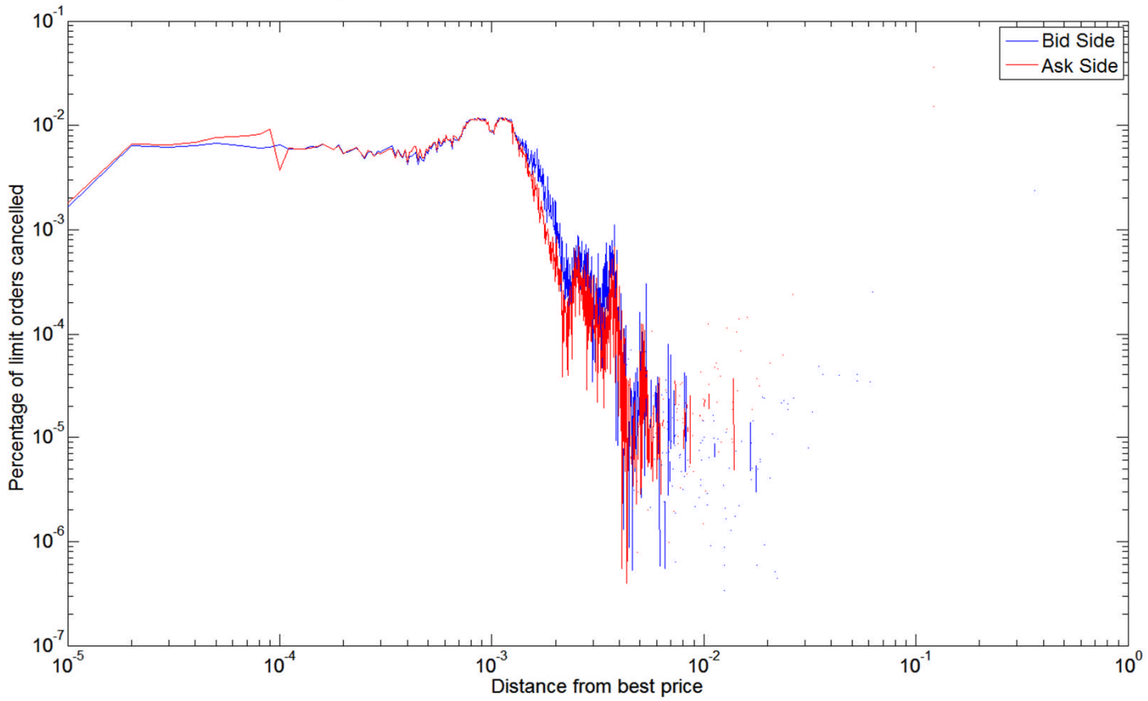

Figure 6: Limit order cancellation rates for AUDUSD

Inferring Trading Strategies

Although market participants are unlikely to ever reveal their exact trading strategies, it is possible to make some inference about them by monitoring their actions in the market. As such, an examination of cancellation rates provides a crucial insight into how market participants attempt to achieve their goals.

Varied Rates

Figure 6 paints an intriguing picture of how cancellation rates are used by market participants: although there appears to be a roughly uniform rate of cancellations up to around 0.001 units away from the best price, beyond that there is a reduction in their use. Such behaviour is not well fitted by any standard parametric distribution.

Mystery #3: What can be inferred from this strange distribution of cancellation rates?

Conclusions

In order to create an effective model of limit order trading, it will be necessary to understand the strange behaviours discussed here, and many more besides. It is possible that such observations are a result of deep, interacting dynamics in the limit order book, in which case further formal study will be required in order to unearth and quantify such structure. Alternatively, it is perfectly possible that human error and irrational behaviour from market participants are the key elements in these mysteries. Either way, developing a deeper understanding of limit order markets will not only enable more effective models to be produced, but could also offer some insight into fundamental economic questions such as why market participants view limit order trading so favourably, or even why people trade in the first place.

Supervisors/Collaborators

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