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## **Intraday Bid Ask Spread Variation in the Electronically Traded Corn Futures Market**

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## Motivation

The magnitude and intraday variation of the bid-ask (BAS) spread in futures markets influences liquidity providers' revenue and traders' execution costs. These costs can affect the attractiveness of hedging and trading strategies.

Previous studies identify a U-shaped intraday BAS pattern in open outcry futures markets (e.g., Wang et al., 1994; Ferguson and Mann, 2001). Recently, electronically traded futures has overwhelmed the outcry market—more than 90% of the volume traded is transacted electronically, bringing more traders to the market place.

## Research questions

Has the influx of traders influenced intraday BAS patterns in the corn futures contract? What has occurred in traded volume, price volatility, and market depth?

## Data

CME group Top of Book (BBO) data.

Electronic corn futures, 1/14/2008 – 1/29/2010.

Trading records from 9:30 AM – 1:15 PM.

Top bid – ask, transaction prices, volume and order sizes in time sequence.

For nearby contracts, about 40 thousand records per day.

In terms of the nearby contracts there are 516 days.

## Method

Calculate average BAS, volume, volatility and top of book depth for each of the 225 minutes per day. For each minute, we have 516 observations.

The intraday variation of BAS and related factors are plotted at their 10, 50 and 90<sup>th</sup> percentiles.

## Results

The BAS is L-shaped intraday in contrast to previous findings on open outcry markets, and exhibits considerable variability across days.

Volume and volatility are both U-shaped similar to previous findings.

Market depth is lowest at the open, highest at close, and stable during the day—consistent with a competitive liquidity market (Frino et al., 2008).

## Conclusion

Intraday BAS variation in the electronically traded corn market differs from open outcry markets. The increase in depth and volume reduces the BAS at market close. An electronic market appears easier for diversified liquidity providers to increase liquidity at close, and reduce the BAS through accumulated order depth.

## Reference

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