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The Impact of Closing the Futures Trading Pits in Chicago on Agricultural Markets

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“In this building, its kill or be killed...”
--Dan Aykroyd, in *Trading Places*

Futures markets exist for two reasons: 1) price discovery and 2) to transfer price risk. For 167 years traders in Chicago have accomplished these purposes using the open outcry system to buy and sell futures contracts (also known as the floor trade or pit trade). In 2006, electronic trading in agricultural futures trading was introduced side by side with the trade in the pits. Trading volume expanded and began to shift away from the floor to the electronic trading platform. With total futures trading volume in the pits falling to about 1% of all futures products, the CME Group has decided to close most open outcry futures trading pits on July 2nd, 2015¹. What, if any, implications does this have for agricultural producers utilizing futures markets for price risk management?

Anyone who has seen the movie *Trading Places* has seen open-outcry floor trading in action. In open outcry or floor trading, traders on a trading floor (in the pit) publicly announce bid and ask prices. If the bid or ask price is acceptable, the trader executes the trade at the bid or ask price. The price at which the transaction took place is then made public. Quotes are valid only for a short time and traders can request quotes, then either accept the best price or refuse to trade. In the case of multiple buyers and sellers offering the same price,

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What does the end of open outcry trading mean for agricultural producers who rely on these markets for hedging, cash contracting, and crop insurance?

the trader can choose with whom he or she wants to trade (Shah and Brorsen, 2011).

Electronic trading is fundamentally different. This trading platform is an automatic matching order system where traders communicate only through computer screens. Orders are posted in a limit order book where the minimum prices sellers are willing to accept and the maximum price buyers are willing to pay are available for all traders to see. These buy and sell quotes are valid until withdrawn from the system. If multiple buyers and sellers offer the same price, the trade is assigned to the order that has been in the system the longest.

While many trades on the electronic platform are entered manually, this system allows for automated trading systems using algorithms to generate trading decisions. CME defines these as “generated and/or routed without human intervention”, giving rise to new class of traders, High Frequency Traders or HFTs. Automated trading reduces the time between the receipt of

¹ Open outcry in options trading is to remain in place for the time being.

information and a trading response, quickly incorporating new market information into prices. However, manual electronic trading is still more common in the agricultural commodities when compared to other futures market instruments (such as financial, metal, and energy markets) (Haynes and Roberts, 2015).

Though futures trading volume has migrated to the electronic platform, a substantial pit trade still exists in agricultural futures markets (see Figure 1). In 2014 about 98% of futures volume in corn, soybeans, and wheat was traded electronically, but over 2.8 million futures contracts were still traded in the pits. That same year in livestock, 91% of trade volume was on the electronic platform with 2.5 million contracts pit traded.

Many cotton farmers remember the last time a futures exchange closed its trading floor. Side by side pit and electronic trading in cotton futures on the Intercontinental Exchange (ICE) began on February 2, 2007 (Janzen, Smith, and Carter, 2013). In December 2007 ICE made the announcement that it would close its trading pits and did so on March 3, 2008. In mid-February, cotton futures were trading in the mid-70s (cents per pound), surged to a high of 93 cents on March 5th, and then fell back to below 70 cents by mid-March. The nearby futures contract moved up or down the daily limit on 12 of 18 trading days in this time period. No major fundamental news of supply and demand or governmental reports or policy changes was associated with this time period, only the elimination of floor trading. The extreme price volatility of these few weeks resulted in margin calls that drove several major cotton merchants into bankruptcy. An investigation of the March 2008 cotton futures price spike by the Commodity Futures and Trade Commission (CFTC, 2010) did not highlight any effects of electronic trading per se, but rather pointed to a confluence of issues related to the broad increase in commodity prices in general, the impact of price limits, changing fundamentals, and market positioning.

What are the implications for agricultural producers, who depend on futures markets to determine the value of many agricultural commodities, from spot and forward contracts (adjusted for time, place, and quality) to price guarantees on crop insurance products, when the pits in Chicago close?

Cost. Electronic trading has lower liquidity cost (measured by the bid-ask spread) than floor trading. The bid-ask spread is sometimes referred to as slippage: the difference between the price received by an urgent seller and the price paid by an urgent buyer (Shah and Brorsen, 2011, Peterson, 2015). A bid-ask spread of 2 ticks is considered good (a tick is the minimum amount by which a futures contract can change price per unit); most are now 1. For a grain contract (5,000 bushels) with a price tick of ¼ cent that equals \$12.50 per contract. For a round turn, that is a \$25 per contract cost advantage of electronic trading over open outcry with a bid-ask spread of 1 tick versus 2 ticks. Another sign of slippage is in the prices at which contracts trade on each platform. In floor trading, prices more often tend to cluster around round numbers than in the electronic trade. A recent study of the wheat market found that 78% of open outcry prices are whole numbers compared to 35% in the electronic market (Shah and Brorsen). Round number clustering makes intuitive sense when considering human outcry traders compared to computer based electronic trading – it's probably easier to have fractions of a cent when using your computer.

Price Discovery. The price discovery process seems to be improved on the electronic trading platform compared to floor trading. Electronic trading reduces human error since all order matching is precise and all bid and ask offers are seen by all (Janzen, Smith, and Carter, 2013). Electronic markets can more rapidly incorporate market information in prices than can floor trading, especially where automated trading reduces the time between the receipt of information and a trading response.

Given the shift in volume from the pit to the electronic platform, lower liquidity cost, and the ability for the electronic trade to transfer price information more quickly, overall market quality is likely improved with electronic trading.

What do we lose when the pits close? Pit trading must still have some advantage for some traders since a considerable number of trades are still transacted there. Open outcry provides traders in the pit with information that is not available on a computer screen, namely the identity of who is on the other side of the trade. Floor traders cite knowing the identities and behaviors of other traders as an important part of the price discovery

process that will be lost when the pits close, noting that pit trading allows for negotiations not available electronically (Carlson and Garber, 2015). When buyers and sellers know each other, the trade is more transparent, which may make it more difficult and less likely for traders to deceive one another or violate the rules. One criticism of electronic trading is the placement of large buy and sell orders for which the trader has no intention of executing—only placing these to mislead other traders and influence the price (Peterson, 2015). Trade transparency may be lost when open outcry floor trading disappears.

Additionally, as futures contracts have traded both electronically and on the floor, trade size (contracts per transaction) is larger in the open outcry market. This suggests that large traders may have a preference for the open outcry market. Open outcry trading may create a much more liquid market for larger blocks of contracts.

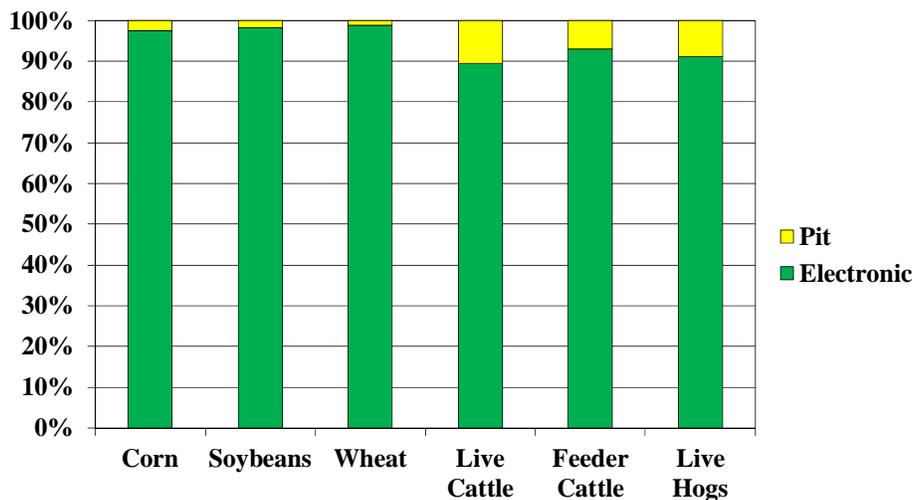
With the advent of electronic trading and the influence of high frequency traders, markets and prices can be roiled by a “flash crash”, computer

generated trades that can overwhelm the market in a very short period of time. Again, floor traders argue that there is value in having a “hand on the switch”, human traders involved that can offer the financial system a safety net when electronic markets fail (Collins, 2015).

Conclusion

Compared to open outcry, electronic trading offers lower liquidity cost and a more efficient price discovery process that improves market quality. The degree to which trading has already migrated to the electronic platform is evidence that this is the preferred method of trading for most market participants. The low volume in the pits suggests that human interaction would be insufficient to calm the market in the event of computer generated market volatility. Safety net measures initiated by the exchange, such as pausing a market, are needed regardless of whether the floor trade is present or not. As Paul Peterson (March 2015) notes, in futures trading, like many commodity markets, the more efficient, lower cost way of doing business wins.

Figure 1. Proportion of pit and electronic trades on the CBOT and CME, 2014



Source: CME Exchange Volume Comparison Report, CME Group, accessed 4/10/2015

References

Daniel P. Collins. "End of an Era", *Futures*, (April 2015): 18-23,35. Available at April 2015 <http://digital.futuresmag.com/t/149305-futures-magazine/18> . (Accessed 4/10/2015).

Carlson, Ryan and Jonathon Garber. "Ordered Chaos: An annotated guide to the bustling Chicago Mercantile Exchange floor", *Business Insider*. Available at <http://www.businessinsider.com/what-did-people-do-at-the-cme-2015-3?op=1>. (Accessed 4/23/2015).

CBOT Monthly Exchange Volume Comparison Report. CME Group. Available at <http://www.cmegroup.com/market-data/volume-open-interest/>. (Accessed 4/10/2015).

Commodity Futures Trading Commission. "Staff Report on Cotton Futures and Option Market Activity During the Week of March 3, 2008". Commodity Futures Trading Commission, Washington, D. C. January 4, 2010. Available at <http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/cottonfuturesmarketreport0110.pdf> . (Accessed May 11, 2015).

CME Monthly Exchange Volume Comparison Report. CME Group. Available at <http://www.cmegroup.com/market-data/volume-open-interest/>. (Accessed 4/10/2015)

Haynes, Richard and John S. Roberts. "Automated Trading in Futures Markets", Commodity Futures Trading Commission White Paper, March 2015. Available at <http://www.cftc.gov/About/EconomicAnalysis/WhitePapers/index.htm>. (Accessed 4/10/2015)

Janzen, Joseph P., Aaron D. Smith, and Colin A. Carter. "The Quality of Price Discovery Under Electronic Trading: The Case of Cotton Futures". Proceedings of the NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management. St. Louis, MO, 2013.

Martinez, Valeria, Paramita Gupta, Yiuman Tse, and Jullavut Kittiakarasakun. "Electronic versus open outcry trading in agricultural commodities futures markets". *Review of Financial Economics*, 20(2011):28-36.

Peterson, Paul. "How Will Closing the Trading Pits Affect Market Performance?" *farmdoc daily* (5):40, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, March 4, 2015.

Peterson, Paul. "Flash Crash, or Flash in the Pan?" *farmdoc daily* (5):83, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, May 6, 2015.

Shah, Samarth and B.Wade Brorsen. "Electronic vs. Open Outcry: Side-by-Side Trading of KCBT Wheat Futures", *Journal of Agricultural and Resource Economics* 36(2001):48-62.