

Aligning our Definitions

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Disclaimer

The ideas and conclusions expressed in this presentation are those of the author and do not necessarily reflect the views of other Commission staff, the Office of the Chief Economist, or the Commission.

Soup of Acronyms

- ATS/AT – Automated Trading Systems / Algorithmic Trading (Trader)
- HFT – High Frequency Trading (Trader)
- MAN – Manual Trading (Trader)

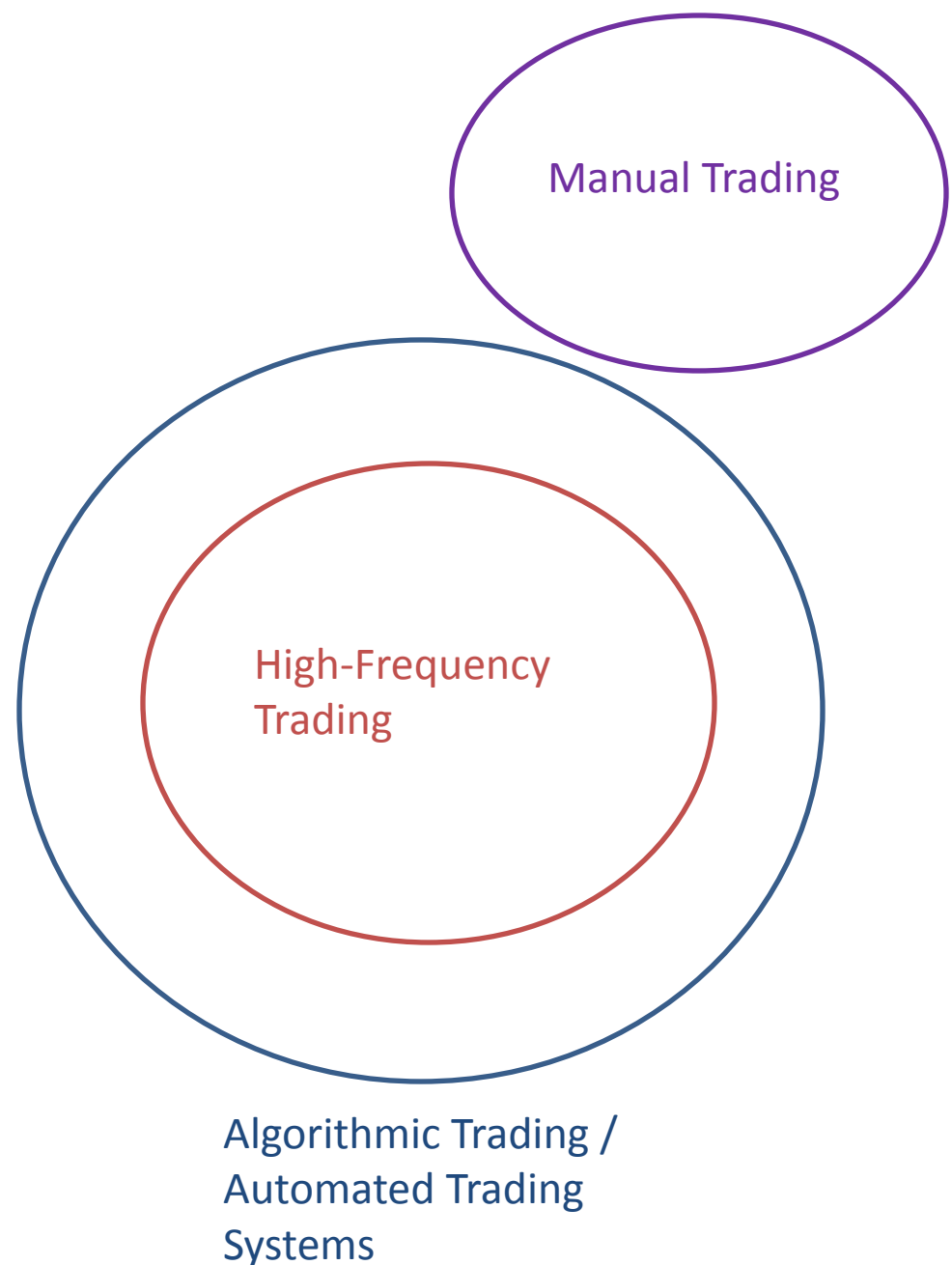
- Where do these definitions intersect and where do they diverge?
- Can we agree on a definition for each?

How to think about them

ATS/AT – Automated Trading System is a trading method that involves orders being entered without human intervention, generally by a computer system or an automated routing functionality.

HFT – High Frequency Trading is when messages are sent to the matching engine at very high frequencies, often via AT designed to take advantage of the trader's low latency capability.

MAN – Manual Trading is a trading method when orders are submitted to the matching engine by an individual directly entering the order into a front-end system, typically via keyboard, mouse or touch screen, and which is routed in its entirety to the matching engine at the time of submission.



How to define an HFT?

The Securities and Exchange Commission (2014) offers five criteria to identify high frequency traders:

- (1) high speed in routing and executing orders,
- (2) use of co-location services,
- (3) short time between establishing and liquidating positions,
- (4) using a submit and cancel approach to orders, and
- (5) ending trading sessions with near zero inventories.

U. S. Securities and Exchange Commission, 2014, Equity Market Structure Literature Review - Part II: High Frequency Trading, Staff of the Division of Trading and Markets, March 18, 2014.

Automated Trading in Futures Markets

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Automated Trading vs. High Frequency Trading

- In the Office of the Chief Economist, we think of traders being automated (ATS) or manual.
- We use a specific flag in the data to identify whether an order is entered manually or not (Tag 1028).
- An ATS trader is not necessarily an HFT.
- In certain markets, Manual traders can sometimes trade faster than ATS traders.

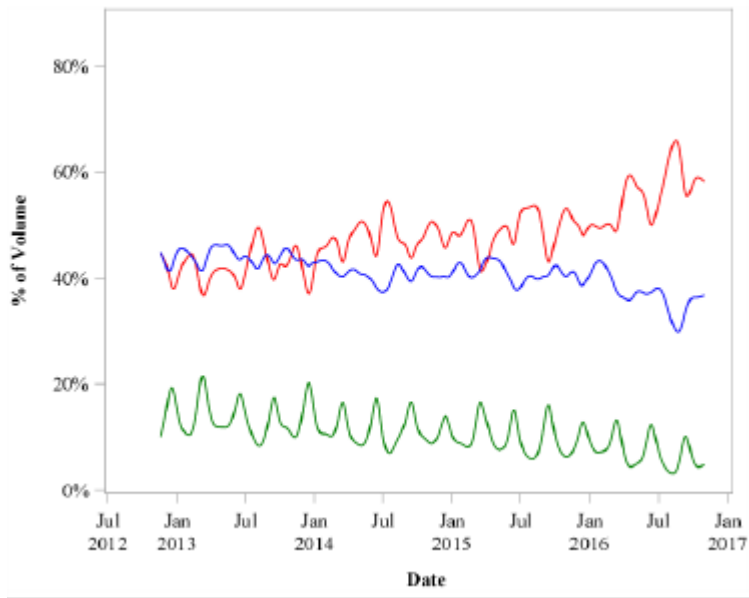
What Percentage of Volume is ATS?

- A study compared the 2012-2014 period to 2014-2016 period analyzing CME transactions
- In that period, grain and oilseed ATS volumes rose from **39%** to **49%**, whereas livestock futures ATS volumes rose from **32%** to **46%**.
- In the similar period, precious metals rose from **46%** to **54%**, whereas crude oil ATS volumes rose from **54%** to **63%**.

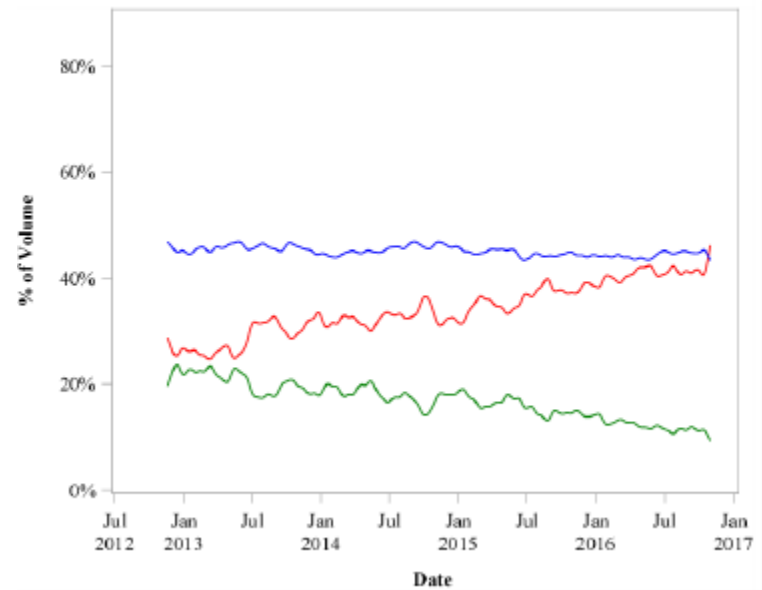
Who Trades With Whom?

Daily Volume Percentages
ATS-ATS (Red), ATS-MAN (Blue), MAN-MAN (Green)

(a) E-Mini S&P 500



(b) Crude Oil

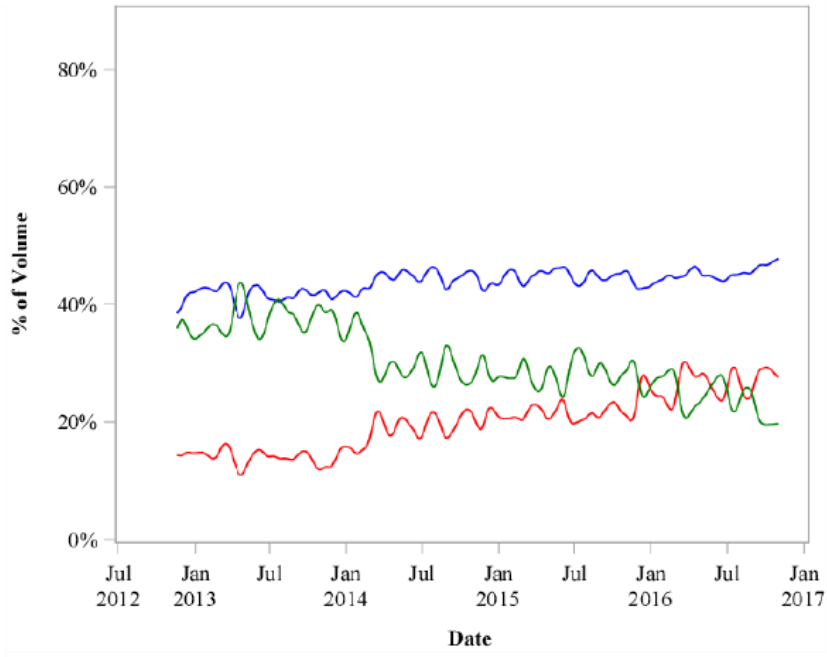


Haynes, Richard and John S. Roberts. 2017. "Automated Trading in Futures Markets," *CFTC Research Papers*

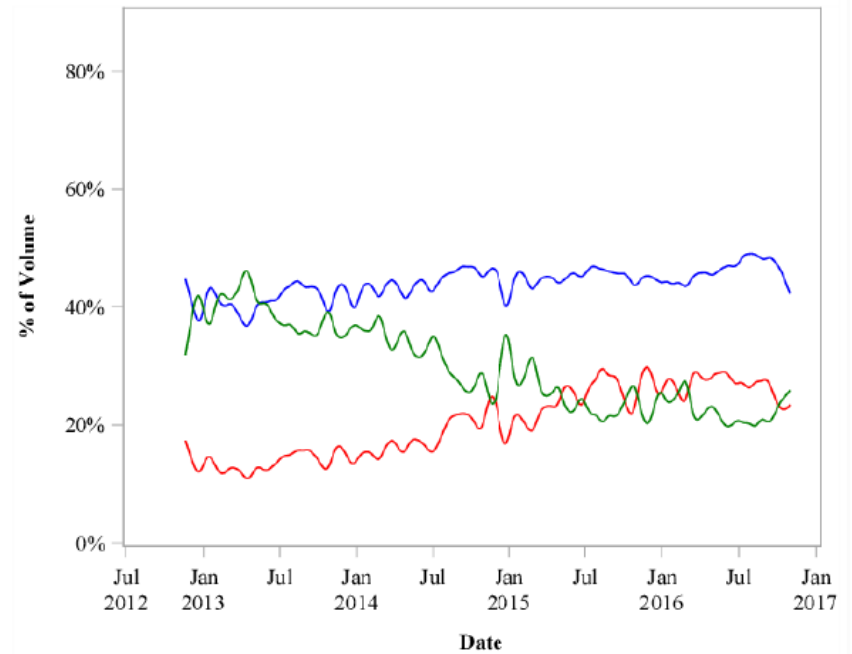
Who Trades With Whom?

Daily Volume Percentages
ATS-ATS (Red), ATS-MAN (Blue), MAN-MAN (Green)

(b) Corn



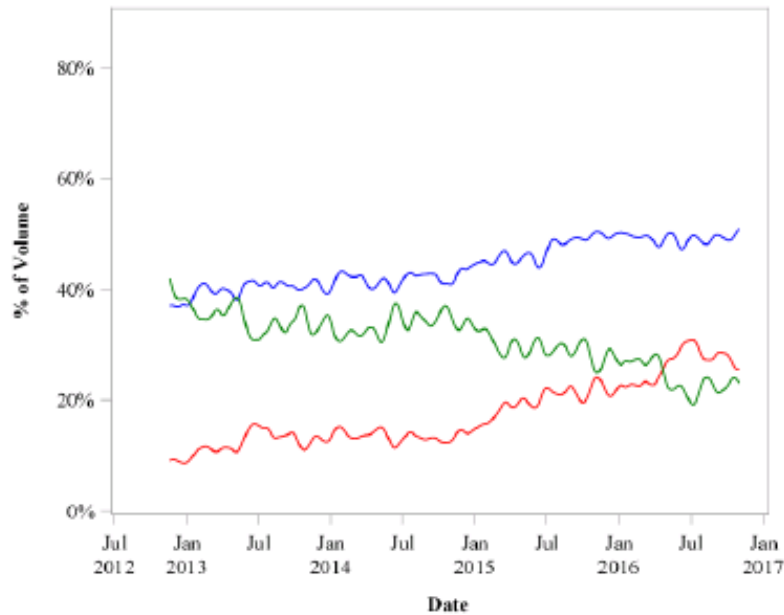
(c) Soybean



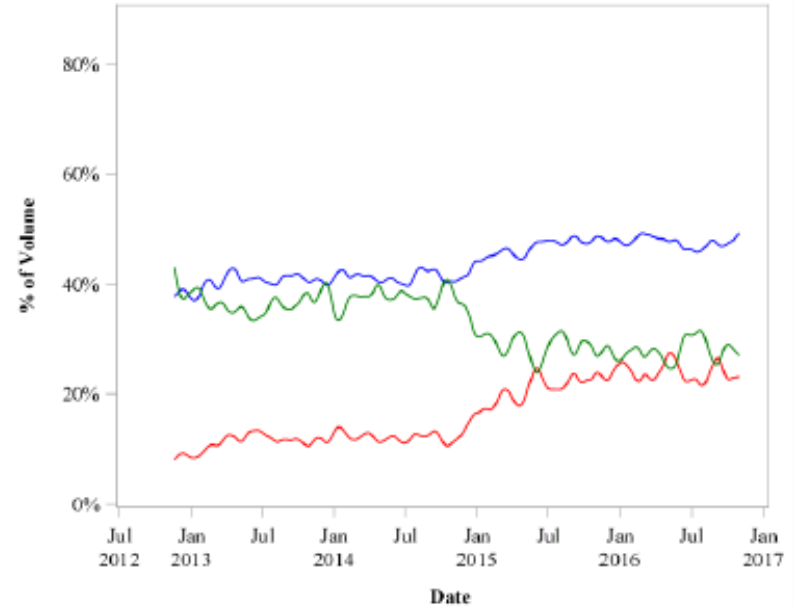
Who Trades With Whom?

Daily Volume Percentages
ATS-ATS (Red), ATS-MAN (Blue), MAN-MAN (Green)

(a) Live Cattle



(b) Lean Hog

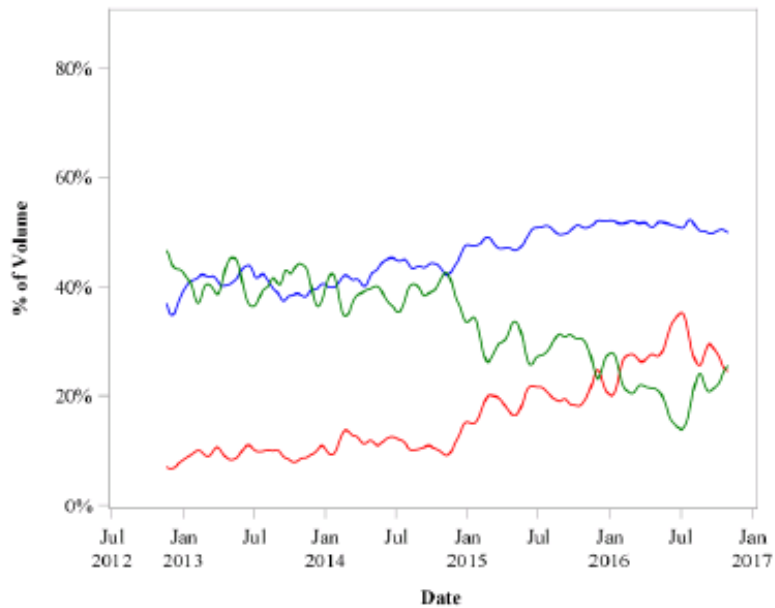


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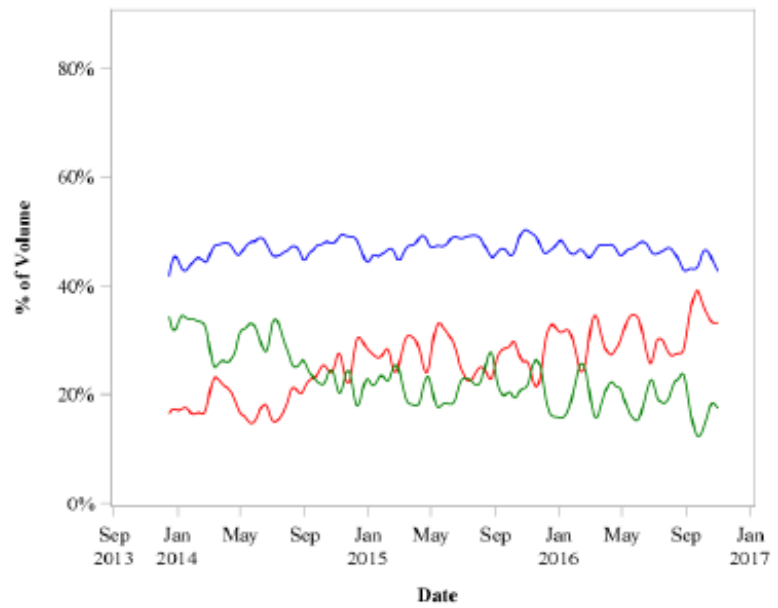
Who Trades With Whom?

Daily Volume Percentages
ATS-ATS (Red), ATS-MAN (Blue), MAN-MAN (Green)

(c) Feeder Cattle

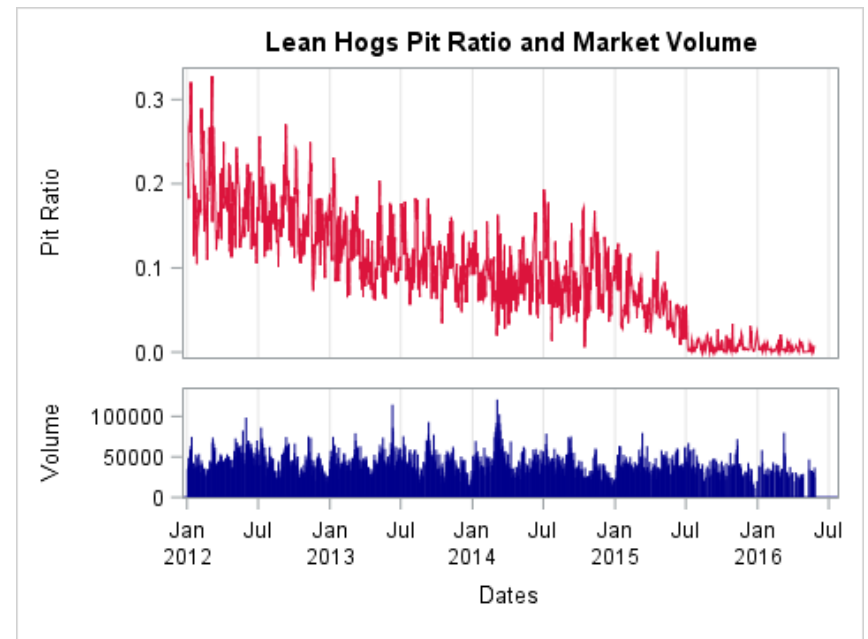
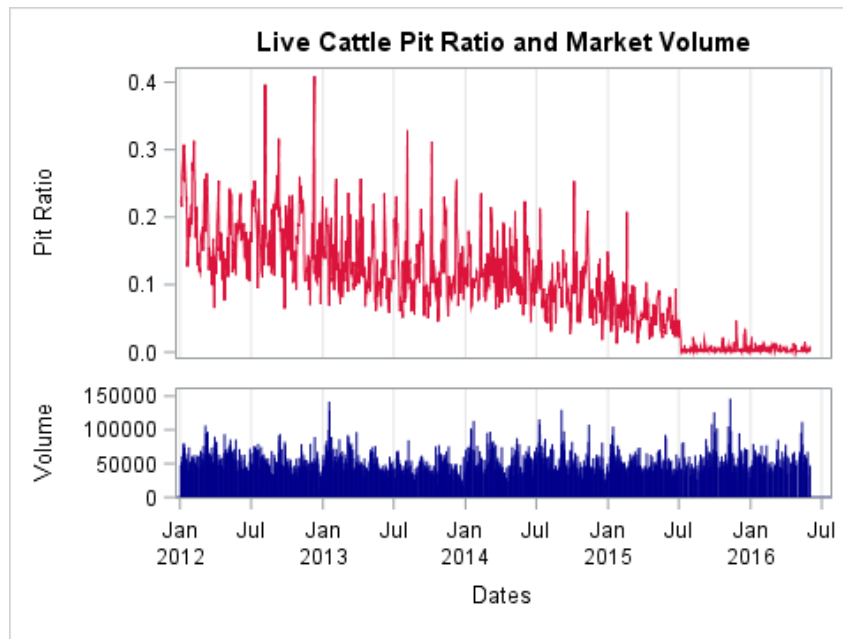


(d) Kansas City Wheat



There were also physical changes in the markets

Pits closed in July of 2015



Gousounis, Eleni and Esen Onur. 2018. "The Effect of Pit Closure on Futures Trading," *Journal of Commodity Markets*, forthcoming

Are there differences between Algorithmic and Manual Traders?

- **YES:** We find that for WTI Futures on average manual traders wait more than 9 minutes before canceling a limit order, whereas ATS traders wait only a little over a minute on average.
- **NO:** When we identify a small group of traders who can anticipate intraday price reversals, we find that speed of trading is not a deterministic characteristic of that small group.

Conclusion

- We see ATS traders in our data but they are not all HFTs
- Percentage of trading volume coming from ATS traders is increasing over the last few years
- ATS and Manual traders trade differently
- But we identify slower traders executing successful trading strategies just as well as faster traders do.