

## Post Modern Technical Analysis

The Implication of Quantitative Approaches to Trading and Investing in Modern Markets

Unofficial Title:

“Computer algorithms will not eliminate the need for human Ingenuity.”

## Are Market Prices Random?

- EMH says simply “YES”
- So let's assume they are.
- Random Prices still trend (Arcsine provides mathematical proof)
- Trends can be captured by the use of careful exit strategies and proper risk management using position-size control (a.k.a. sound money management).

## Randomness is your Friend

- The Arcsine Law predicts that trends will persist even In Random Data
- This happens because randomness shows many evidences of winning or losing streaks. Counter-streaks are less likely that the probability of the original streak.
- Technical Analysis merely needs to identify trends and trend changes to capture alpha and profits
- **“We show that trend-following profits rely on favorable price characteristics rather than a genuine forecasting ability.”**  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2944679](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2944679)

## Will algorithmic trading change the random behavior of the markets?

- If algorithms made the market less random, that would make them more predictable.
- Greater predictability would become an arbitrage opportunity that traders would work to reduce.
- If algorithms made the market MORE random, then prices will still trend (back to the arcsine law)

## What about big data and machine learning?

- Machine learning and big data may represent a new class of sophisticated algorithm which could possibly incorporate the lessons of behavioral finance and the quantitative effect of human biases.

<http://www.sciencedirect.com/science/article/pii/S2212567115000076>

- Suppose this COULD increase the efficiency of the market, which in turn made trends less likely and therefore reduced the possibility of future gains from trading.

<https://www.cxoadvisory.com/5386/technical-trading/technical-trading-thoroughly-tested-on-emerging-currencies/>

## The hard reality of algorithms

- All algorithms are the creation of a human brain exercising its pattern-matching and pattern abstracting skills.
- Computer systems that develop better-than-human algorithms on their own might never be achieved
- At a minimum are still likely to be decades away.
- Human ingenuity creates algorithms, so analysts and traders will still be needed for the foreseeable future.



## Example 1: The FOREX markets

- Some Forex brokerages claim that over 75% of the trading they see is conducted via algorithm.
- Trends still exist in Forex market
- Trends will occur whether market prices are random or not



## Example 2: The Cryptocurrency markets

- Little is known about the participants in these markets
- Yet trends appear to exist in cryptocurrency market
- Trend changes will still be evident and noticeable by technical analysis





## Charles Dow said it best

- Dow Postulated:
- The definition of a trend (successive highs and lows)
- The change of a trend (a change in succession)
- The unpredictability of the length or intensity of the trend



# Post Modern TA



## Questions and Answers

