

# Cannabis Stocks and Media Hype

Time Series Analysis // Sentiment Analysis  
Proof of Concept

This presentation is on the effects media hype has on the price of cannabis stocks. Our research used time series analysis and sentiment analysis of financial articles to prove our concept.



# Problem Statement

- Media influence can artificially increase the value of stocks, especially in new industries.
- Investors must rely on media, in part, to find new stocks in which to invest, but can find themselves losing money if stocks are artificial inflated at time of purchase

Animal spirits, or the human emotional drive, are the least predictable influence on a stock's price. These influences are often gut feeling or the result of tips, and can too often end up with investors losing money due to poor timing. When intuition or belief in a product is paired with a well-valued stock, the investor has a golden opportunity to see their money grow while feeling good about how it's growing.



# Business Value

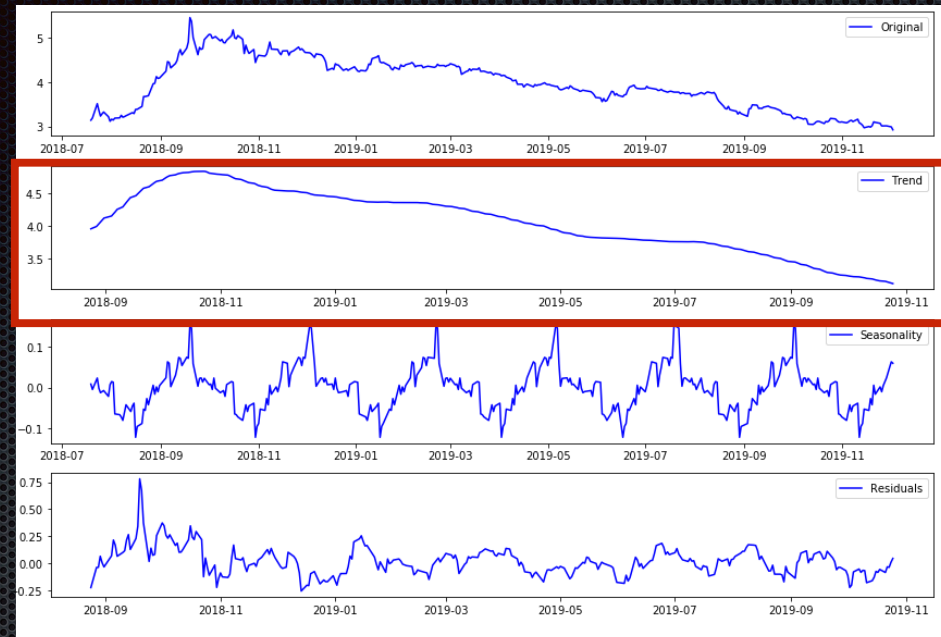
For Investment Companies, Financial Writers, & Individual Investors:

- Ability to distinguish artificial growth from value = increased trust and reputation

For Investment Companies: People have grown hesitant to entrust their money to investment organizations. Distinguishing between solid investments and “fads” will help an investment company’s reputation.

For Financial Writers: Similarly, financial writers will gain readership if investors trust that they are able to distinguish true value from artificial growth



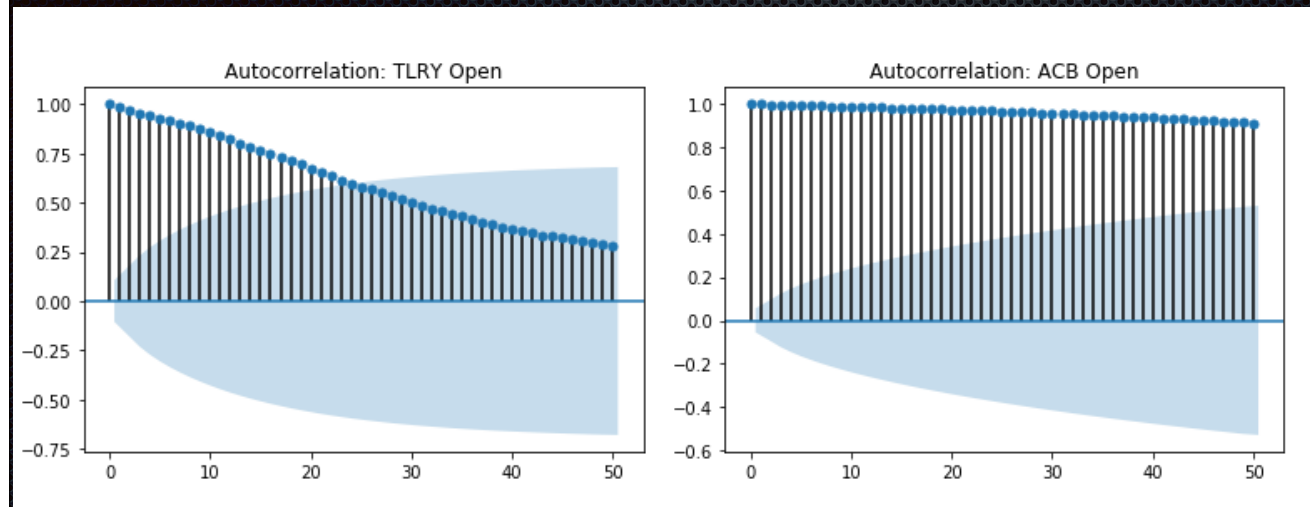


## TLRY Growth Trend

- ✦ Two Months of Sharp Growth
- ✦ Twelve Months of Steady Decline

For our project we analyzed data from four popular cannabis stocks: Tilrery, Inc. (TLRY), Aurora Cannabis (ACB), and Canopy Growth Corporation (CGC), and Cronos Group (CRON). Out of all four stocks, TLRY showed the most irregularities and was also the most discussed in financial articles.

After processing TLRY's stock data, we could see its growth trend. For the first two months of its launch on the NYSE, it showed unprecedented growth. Then, around November 2018, the price began to fall and continued to fall for the next year.

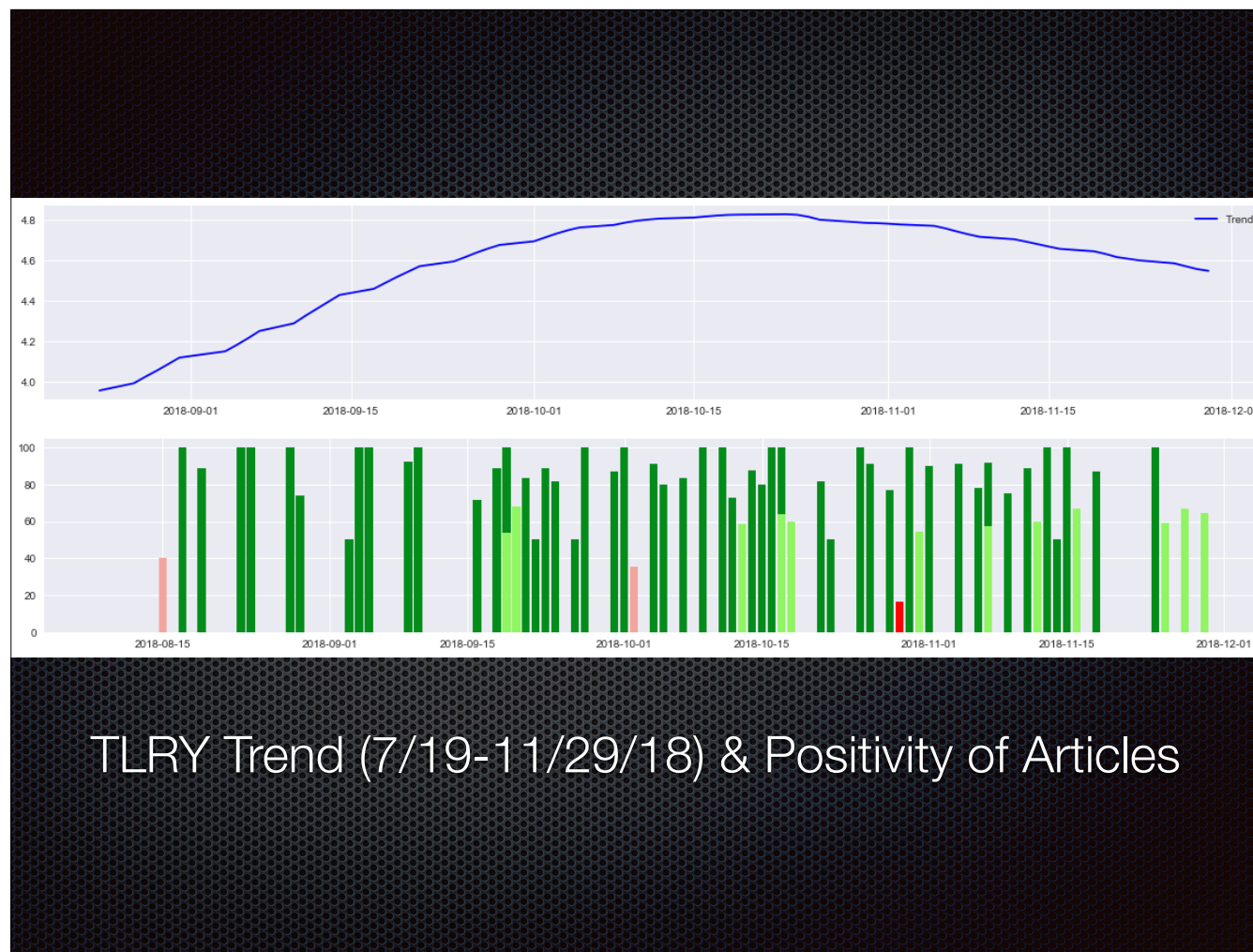


### Autocorrelation//Partial Autocorrelation

- 1.00 = Past Prices are Good Indicators of Future Value
- Below 0.75 = Past Prices are NOT Good Indicators of Future Value

Our autocorrelation tests showed that while the other three stocks showed strong autocorrelation, TLRY did not. This means that TLRY's initial prices were not indicative of future growth, and implies that it may have been overvalued at its initial offering price.





After analyzing one hundred articles regarding TLRY and categorizing them according to their level of positive sentiment, we can see that during TLRY's first few months on the NYSE, the vast majority of articles were positive in TLRY's favor. Even after TLRY's growth slowed and began to stall, there were very few negative articles written. This implies that animal spirits for TLRY remained high, even though a few analysts had begun to warn of its overvaluation.



# Lessons Learned

- For investors: When researching stock options, beware of artificial growth. Select a stock that provides an upward trend supported by strong autocorrelation and remember if it sounds too good to be true, it probably is.
- For financial writers: Be cautious about inflaming animal spirits and influencing artificial growth. While trends should be reported, hype should be avoided.

What we've learned from this proof of concept is that while short-term gains can be made in hyping up a stock's potential, it is in the best interest of the investor, and therefore the investment company to select a stock that has potential for true value growth.

We've also learned that financial writers have an obligation to be wary of inflaming animal spirits and thereby instigating artificial growth, as sentiment is more easily remembered than potential earnings values.



# Future Research

- Extending the sentiment analysis to the life of all four stocks included in the first half of the project (TLRY, ACB, CGC, CRON)
- Expand the sentiment analysis to adverbs and verbs as well as adjectives.
- Predict future prices and use sentiment analysis classifier to predict the weight of influence or how long the influence lasts after initial stock launch

For future research, I would like to extend the sentiment analysis to the four other stocks included in the project and include adverbs and verbs (as verbs such as 'plummeted' can indicate negative sentiment, while verbs such as 'sky-rocketed' can indicate positive sentiment). I would also like to use the sentiment analysis classifier to predict the weight of influence and how long it lasts after the initial stock launch.





Thank You for Your Time!

Thank you for your time. If you have any questions or would just like to reach out, feel free to contact me.