

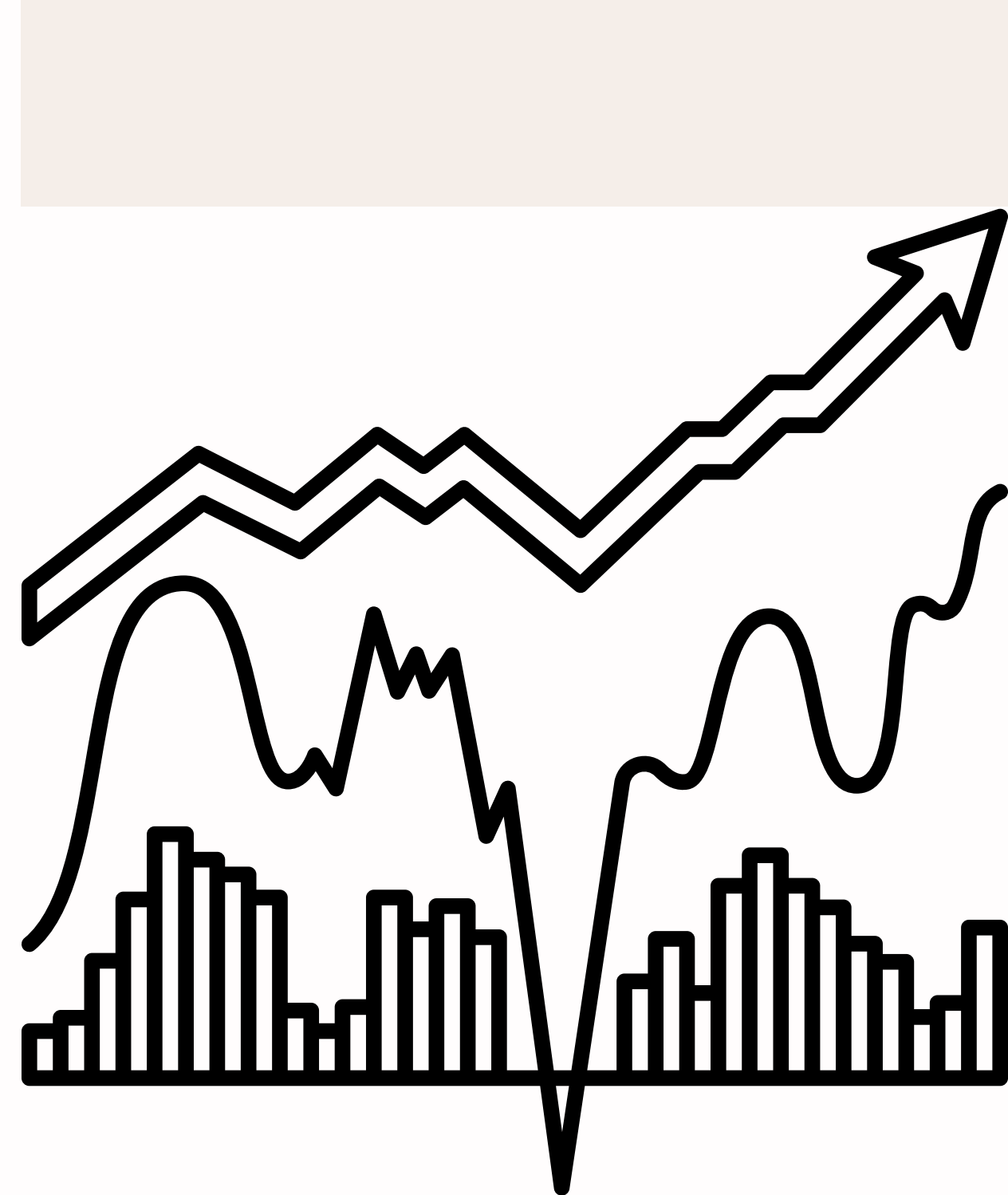
POP OR FIZZLE?

PREDICTING STOCK PERFORMANCE POST IPO

An initial public offering (IPO) is the first public sale of stock by a private company.

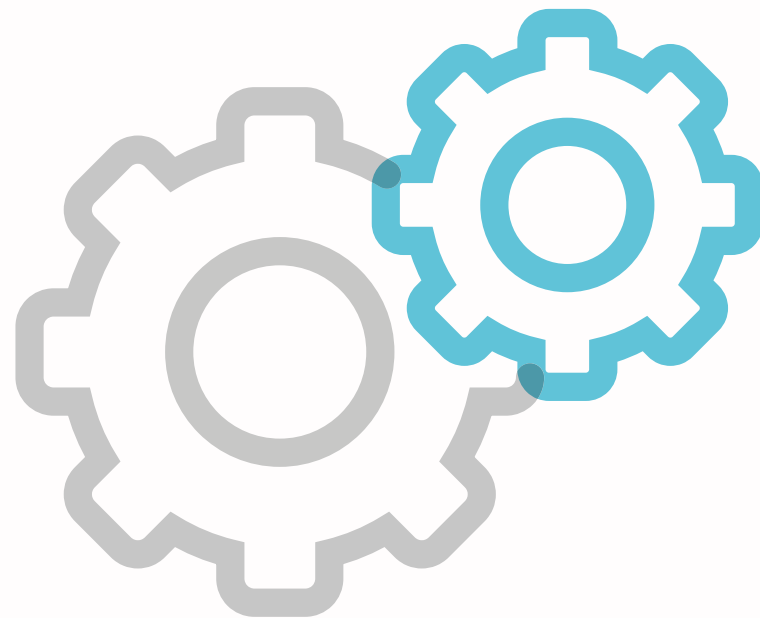
This early period provides great opportunity and great risk for investors.

PRESENTED BY PATRICK BROWN



DATA

- IPOs
 - List IPOs since 1995
- Company Info
 - Shareholder equity, Net Revenue, etc.
- Stock Data
 - 180 days post IPO



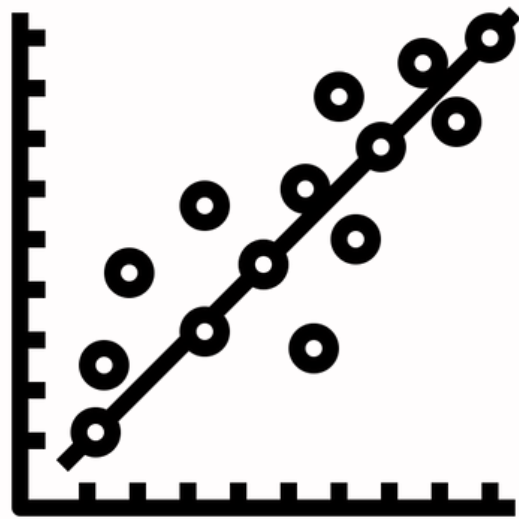
S T A T S

- 3,000 Companies
- 7,000 URLs Visited
- 500,000 Rows of Data

METHODS

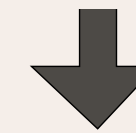
Algorithms

- Linear Regression
 - Ordinary Least Squares

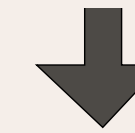


- Exponential Weighted Moving Average

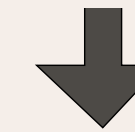
T O O L S



BeautifulSoup



pandas



statsmodels

BUILDING OUR MODEL

Input: Closing Price

Output: Closing Price 28 Days Later

Predicting Stock Price

- $R^2 = .884$

Predicting Stock Change

- $R^2 = .028$

Input: Closing Price (Weighted Average)

Output: Closing Price 28 Days Later

Predicting Stock Price

- $R^2 = .882$

Predicting Stock Change

- $R^2 = .022$

BUILDING OUR MODEL

...ADDING COMPLEXITY

Input: Closing Price + Company Info

Output: Closing Price 28 Days Later

Predicting Stock Price

- $R^2 = .884$

Predicting Stock Change

- $R^2 = .036$

Input: Closing Price + Company Info + Industry

Output: Closing Price 28 Days Later

Predicting Stock Price

- $R^2 = .885$

Predicting Stock Change

- $R^2 = .039$

BUILDING OUR MODEL

...FINAL

Input: Closing Price + Company Info + Industry + Market Indicators

Output: Closing Price 28 Days Later

Predicting Stock Price

- $R^2 = .887$

Predicting Stock Change

- $R^2 = .057$

Notable Predictors

- Company Info
 - Proposed Share Price +0.034
 - Assets/Liabilities Not Significant
- Industry
 - Drug Manufacturing highest positive impact +0.847

CONCLUSIONS



Previous stock price is the best predictor for future stock price.



Predicting stock change is a difficult problem and will require more work.

Company's size (employees, assets, liabilities, revenue) has little relation to stock performance.

General market trends as indicated by large index funds are better predictors than of changes in stock price than company specific data.

FUTURE WORK

Data

- Find more company specific data
- Utilize NLP to generate features from company documents
- Incorporate Time Series Features

Modeling

- Explore more complex models such as ARIMA