

Predicting Recent IPO Stock Price

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Abstract

An Initial Public Offering or IPO is a time of great risk for companies. As these companies first enter the market they have the opportunity for great growth and decline. The goal of this project was to decrease risk by better understanding what factors relate to stock performance post IPO and develop a model for predicting stock price. In our analysis we find that the largest predictive factor in stock price is the previous listing. Utilizing a number of features, we account for 88% of the variance in stock price at a 4 week interval.

Design

IPO's are a great opportunity for investors but carry a lot of risk. By better understanding the factors that relate with performance during this period of a company's lifecycle, we hope to decrease risk for investors. Can we reduce risk by modeling stock price post IPO? Can we accurately model stock price during the first 6 months after a company goes public?

Data

Data was scraped from the Nasdaq website on 4,000 companies that have gone public since 1995. Stock prices for each company were gathered for the 180 days immediately following its IPO. Data on Dow Jones, S&P 500 and various other index funds was gathered for 1995 to present.

Algorithms

Linear regression with ordinary least squares was used for the predictive model. Feature engineering was done utilizing Exponential Weighted Mean.

Tools

- Pandas (Cleaning and EDA)
- Numpy (Preprocessing)
- Stats Models (Modeling)
- Sklearn (Modeling)
- Seaborn (Visualization)

Communication

Code for the project can be found on on my Github <https://github.com/PatrickTyBrown?tab=repositories>.