NYSE
Modeling Predictive Performance

S&P 500

Net Cash Flow

COMPANY DATA

Annual SEC Filings

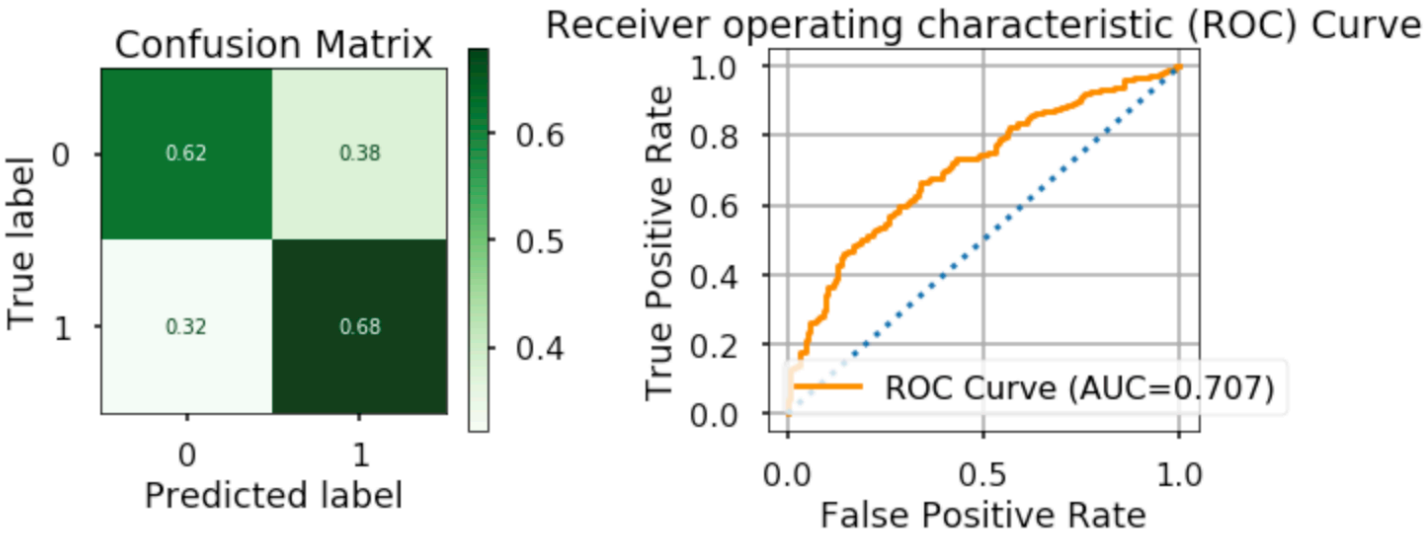
2012 - 2016

Which features increase predictive power on Positive Net Cash Flow?

Models Used

- **Decision Trees** are a type of Supervised Machine Learning (that is you explain what the input is and what the corresponding output is in the training data) where the data is continuously split according to a certain parameter.
- This model tests all the different features of the data to see which are best to split with a number of different approaches – resulting in feature importance.

Accuracy of model

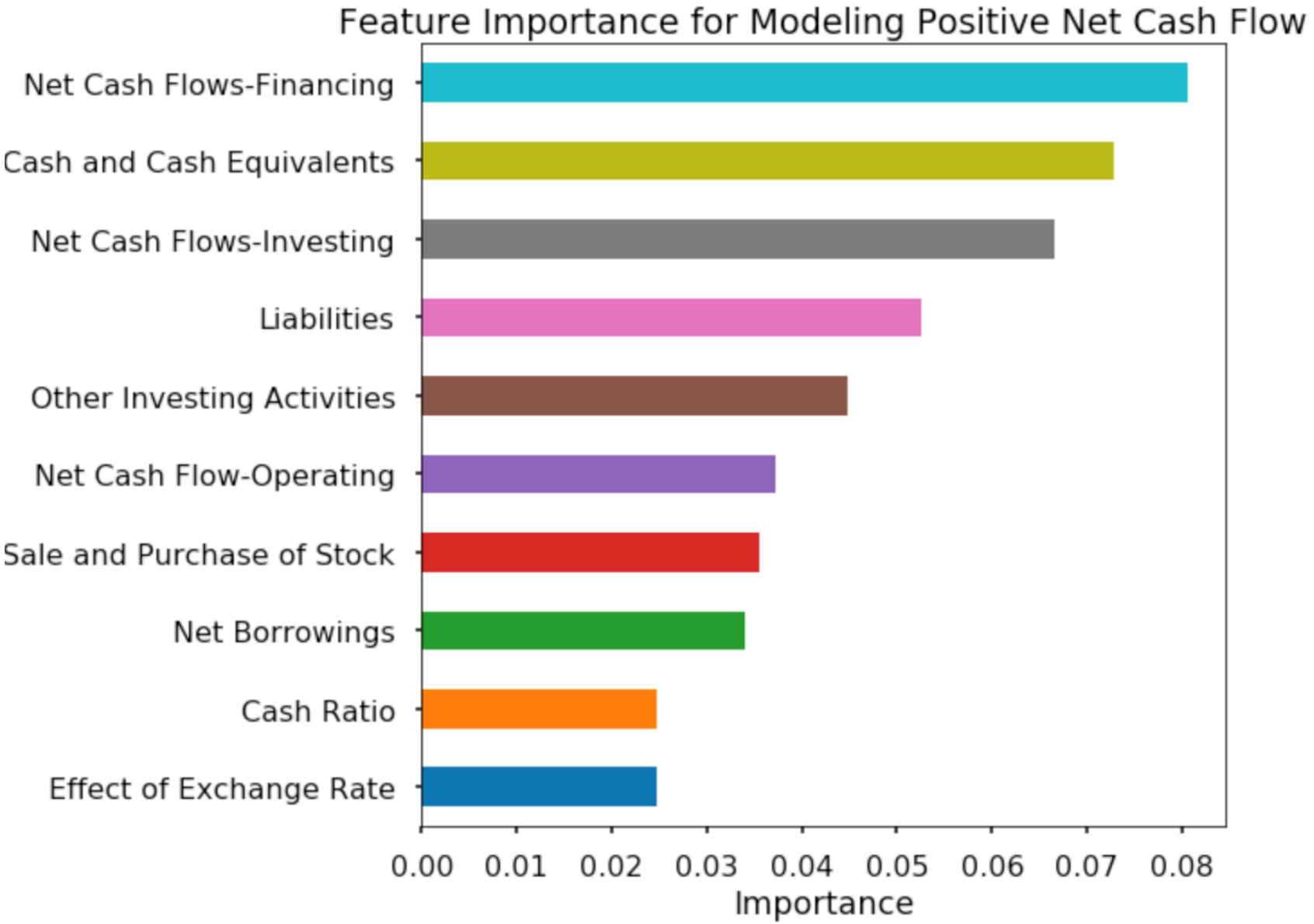


62% chance of a correct positive net cash flow prediction

58% chance of a correct negative net cash flow prediction

- The accuracy of this model has above average balance for both positive and negative net cash flow prediction.

- This model may result in a very small percentage of companies with accurate predictions.


Feature Importance for Modeling Positive Net Cash Flow
Net Cash Flows-Financing
Cash and Cash Equivalents
Net Cash Flows-Investing
Liabilities
Other Investing Activities
Net Cash Flow-Operating
Sale and Purchase of Stock
Net Borrowings
Cash Ratio
Effect of Exchange Rate
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
Importance

Recommendations

- Focus on increasing sales ratio to purchase of stock.
- Ensure financing and borrowing have a relative balance to liabilities and cash.
- Decrease operating costs.
- A strong $US exchange rate will effect positive net cash flow balance.

Future Work

- One day ahead prediction with rolling linear regression
- Indicator data including for example Momentum and Moving Average values on stock price
- Categorizing of data / Further classification of companies depending on industry
- Further modeling algorithms on the data to find a stronger predictive performance

THANKYOU

Presented by Sue Mir 07/May/2019