Finding Stock Market Inefficiencies

ANALYSIS BY BRIAN BENTSON

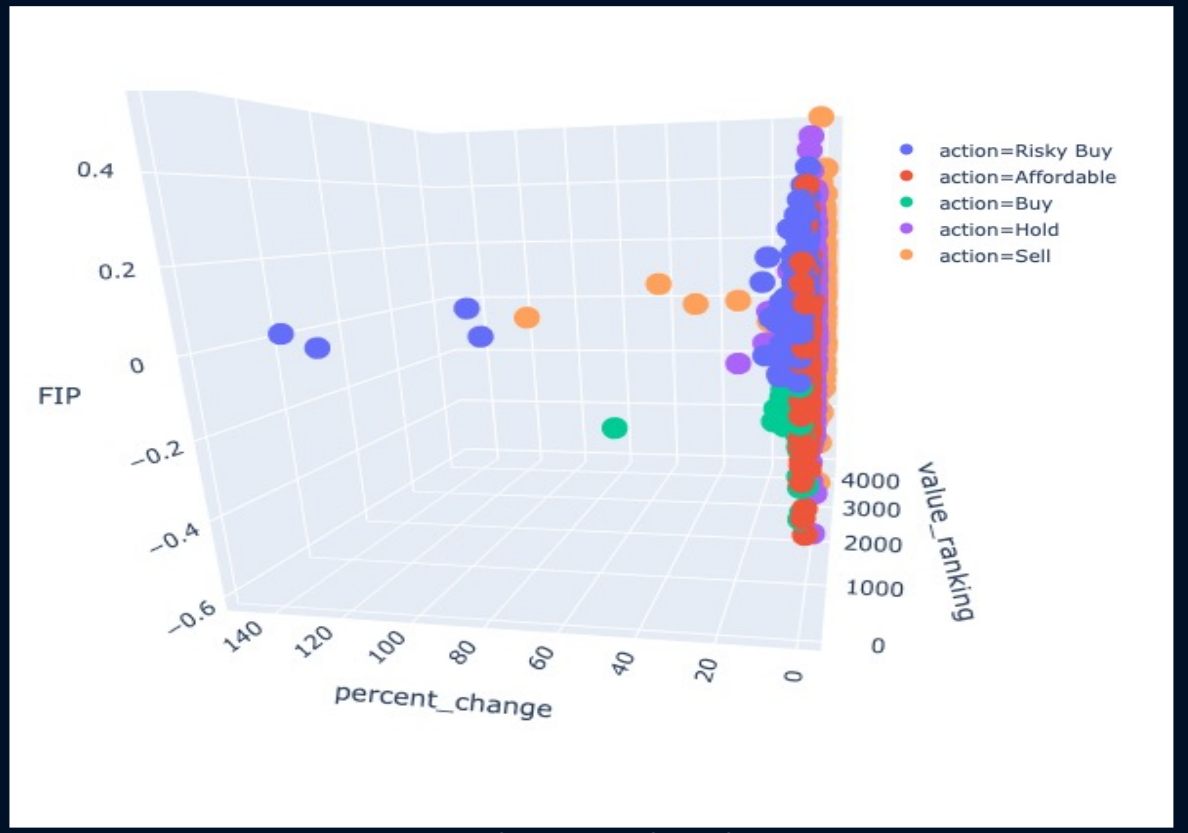
Finding Stock Market Inefficiencies

This analysis focuses on finding which stocks offer the unique combination of low cost and low volatility growth in the stock price.

1 Use machine learning to find which companies to Buy

2 Use anomaly detection to find data quality issues

3 Visually interact with KPI's to research potential stock purchases and sales



Stocks Grouped by Recommended Action after analysis of 3 key factors:

1. The value of the stock which is its price relative to its performance
2. The percent change of a stocks price over the past 1 year
3. The price momentum or volatility (FIP metric) over the past 1 year

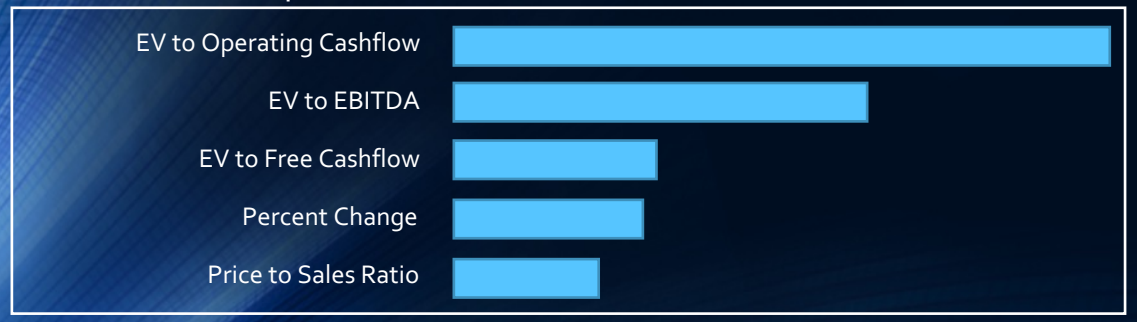
Machine Learning Results

Two algorithms were used to solve separate problems. Classification was used to identify inefficient stocks (Buy) and anomaly detection was used to identify questionable data quality.

Classification

Percentage Correctly Classified

Model Feature Importances

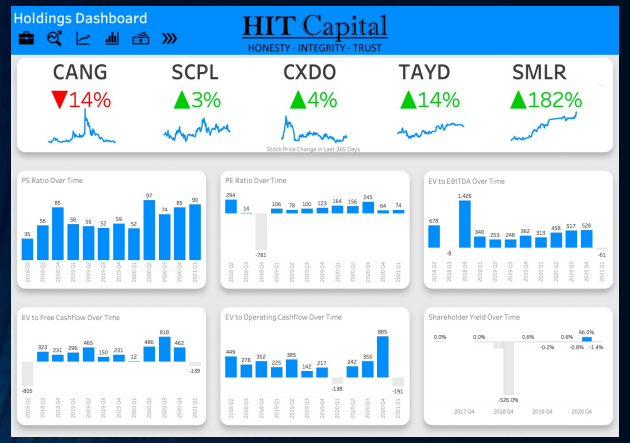


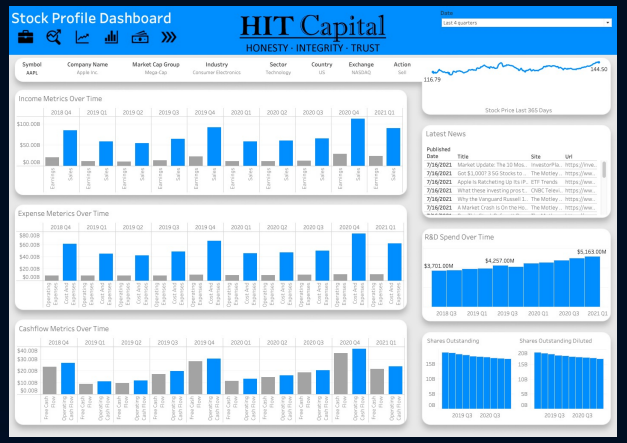
Anomaly Detection

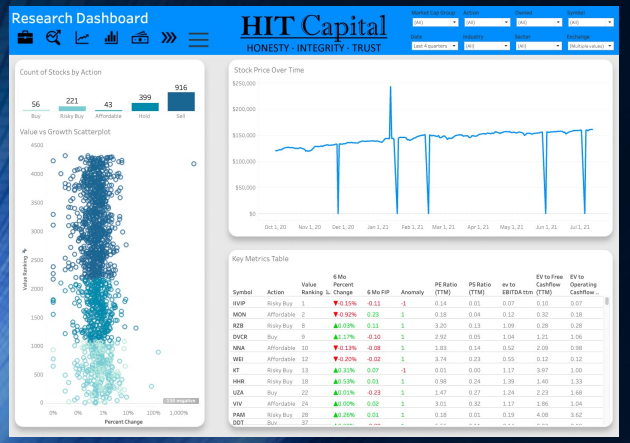
Symbol	Revenue Per Share	PE Ratio	PS Ratio	EV to EBITDA	EV to Free Cashflow	EV to Operating Cashflow
IIVIP	26,456	0.14	.01	.07	.1	.07

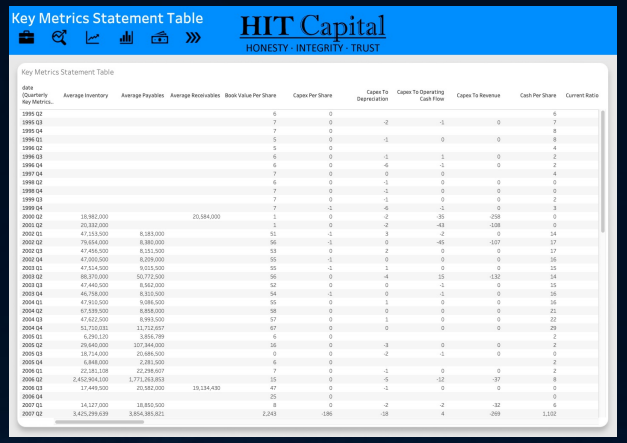
Stock Performance Dashboard

A Tableau dashboard was built to aid in the discovery of inefficient stocks. The dashboard allows a user to explore key stock information in an interactive visual experience.









3 Main Dashboard Functions:

1. View performance of current holdings for potential sale
2. Research new companies to buy
3. Validate underlying data quality

Dashboard Demo

Recommendations & Improvements

Based on analysis findings, it is possible to utilize historical stock metrics to prioritize which stocks to further evaluate for investment.

Recommendations

Utilize anomaly detection results

Quickly know which stocks to dive deeper into their data to ensure quality

Focus on Enterprise Value to Free Cashflow

This metric provided a great metric to the classification algorithm to group the stocks into their respective categories

Explore the Dashboard

The dashboard integrates many import stock metrics in an interactive way that should speed up evaluation

Future Improvements

Make a Live Connection

Create a live pipeline which feeds refreshed data to the dashboard automatically

Thank you

Questions?

Appendix

Data Overview

- Sourced data from FMP's API
- 4311 stocks after removing null or negative values and removing highly volatile sectors
- Pulled company profile information, historical performance metrics and stock price