PREDICT STOCK MARKET DELISTING IN INDIA

- Anjali Sebastian

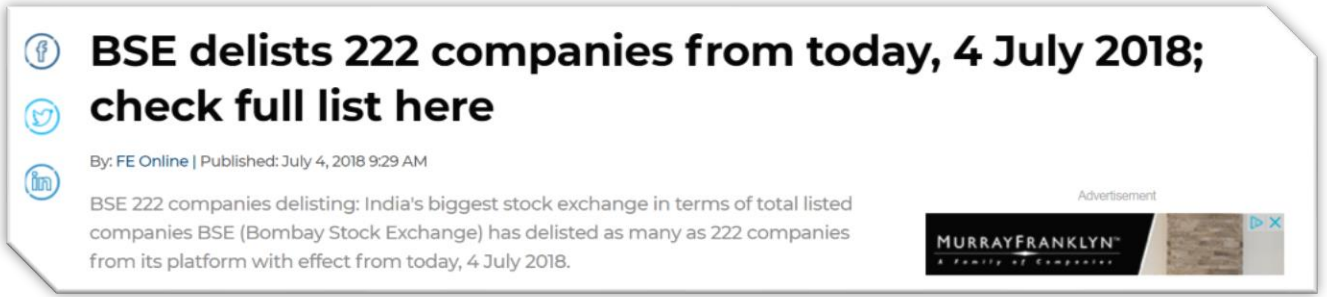
INTRODUCTION

MOTIVATION

- An epidemic in emerging economies
- Investor and Mutual Fund Perspective
- Lack of stringent regulation
- Emerging market volatility

REASONS FOR DELISTING

- Bankruptcy/Financial Distress
- Failure to comply with Regulations
- Possible Fraud (shell companies)
- Privatize to retain profits



BSE delists 222 companies from today, 4 July 2018; check full list here

By: FE Online | Published: July 4, 2018 9:29 AM

BSE 222 companies delisting: India's biggest stock exchange in terms of total listed companies BSE (Bombay Stock Exchange) has delisted as many as 222 companies from its platform with effect from today, 4 July 2018.

Advertisement
MURRAYFRANKLYN

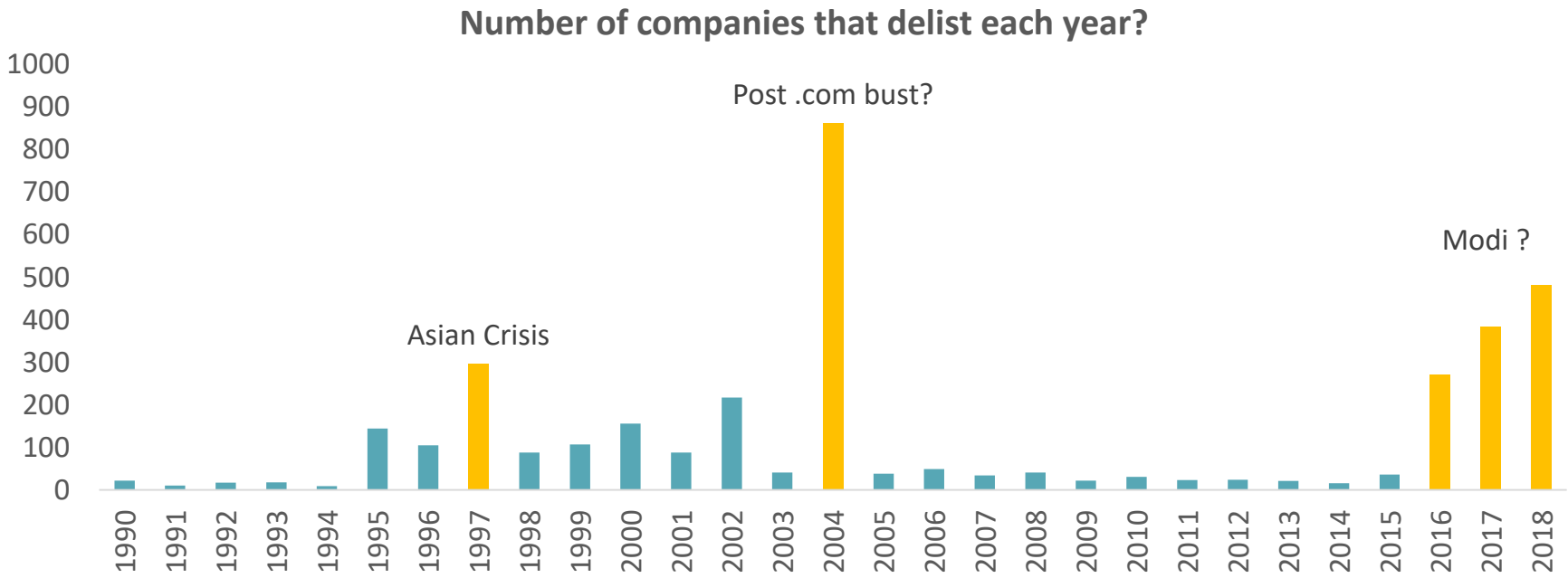
~ 8000 listings in total

~ 4200 currently listed

~ 1000 delisted in last 3 years

Data not available for all delisted company

DELISTING PATTERN



DATA

Source

Constructed Dataset

Prowess Dx, India

Companies from NSE, BSE

Features

Financial Statement

Net Income, sales, assets, liabilities …

Stock Market Data

Market Capitalization

Earnings per share …

92 Features

Structure

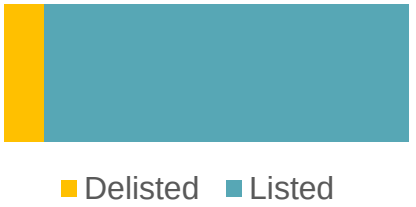
Listed Companies

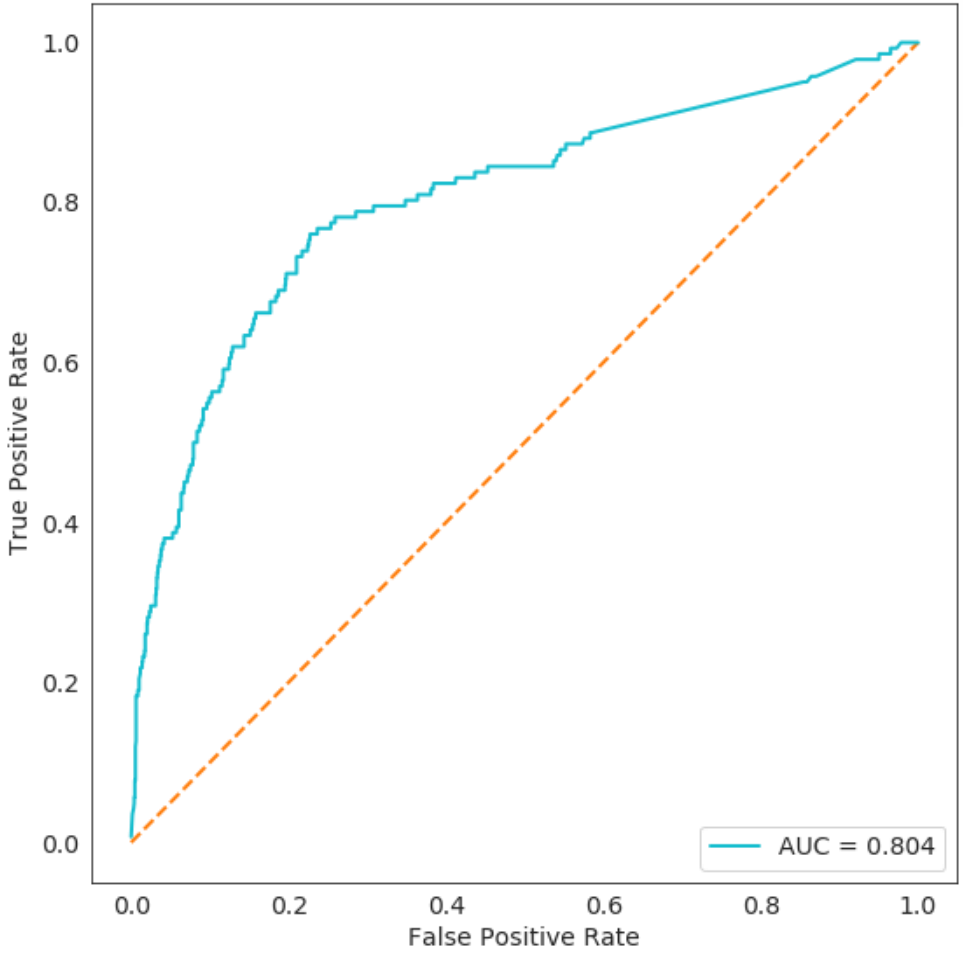
2017 data

Delisted Companies

2015 onwards

Last known data before delisting





BEST MODEL

Train-test-split
Impute - Mean
Balance Date - SMOTE
Scaler – No
Principle Component Analysis- No

Random Forest
N-Estimator = 25
Max Leaf Node = 41
Max Depth = 7

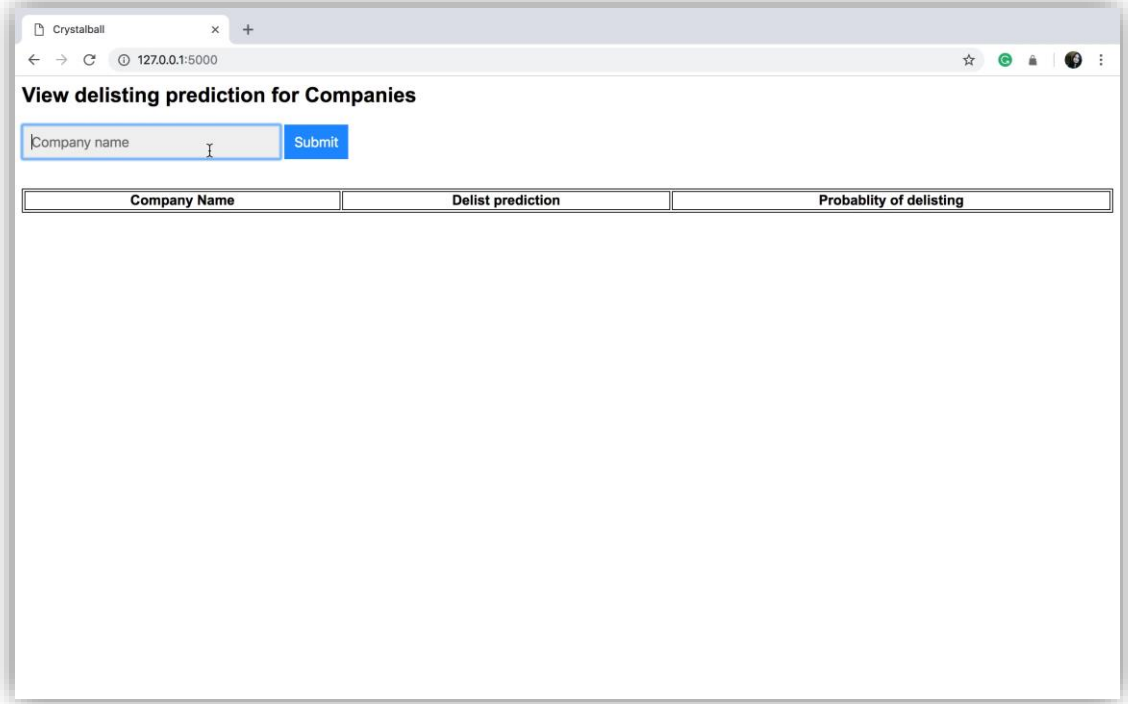
RESULTS

ASSIST IN PICKING SAFE STOCK

- Threshold = 0.15
- Precision Listed = 97%
- Recall Delisted = 80%

	Precision	Recall
Listed (0)	**97%**	67%
Delisted (1)	21%	**80%**

Created a Flask Application using 2018 data to predict the future



MARKET RESEARCH

Company Name

INFOSYS LTD.

INFOSYS LTD.

MARKET AVERAGE

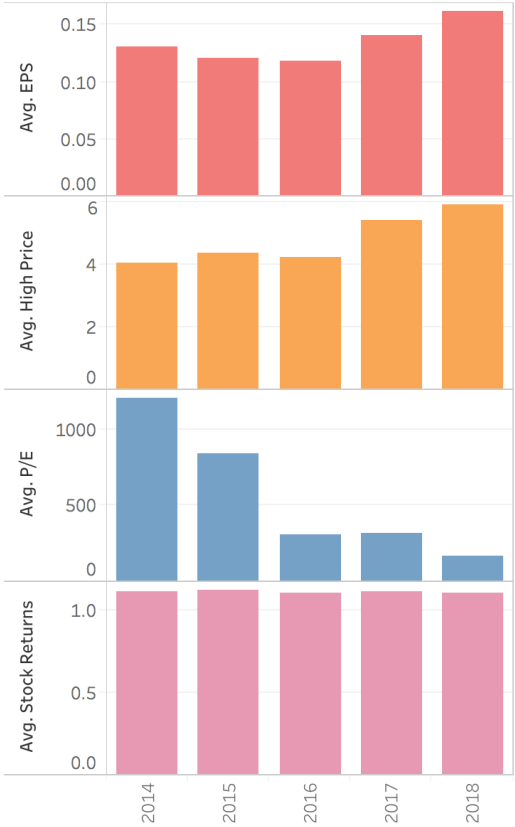


TABLEAU DASHBOARD

CONCLUSION

FUTURE WORK

Other Stock Exchanges

Add Macro-economic features

Model different reasons for delisting separately

Altman’s Z-Score Predictor

THANK YOU

TOOLS

Pandas, Sklearn, Matplotlib, SMOTE, PCA, imblearn

Tableau, Jupyter Notebooks, Atom, PowerPoint

Flask, JavaScript, AJAX, HTML

METRICS AT THRESHOLD = 0.5

Confusion Matrix

	Predicted (0)	Predicted (1)
Actual (0)	**1153**	136
Actual (1)	64	**78**

Classification Report

	Precision	Recall	F1-score	Support
Listed (0)	**95%**	89%	92%	1289
Delisted (1)	36%	**55%**	44%	1431

METRICS AT THRESHOLD = 0.15

Confusion Matrix

	Predicted (0)	Predicted(1)
Actual (0)	**860**	429
Actual(1)	28	**114**

Classification Report

	Precision	Recall	F1-score	Support
Listed (0)	**97%**	67%	79%	1289
Delisted (1)	21%	**80%**	33%	1431