Stock price prediction and sentiment analysis

Franclim Cardozo

Data Analytics Bootcamp 2019 | Final Project
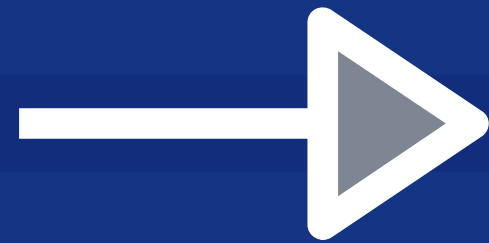
Motivation

Can we predict IBM stock prices using machine learning?

Can we use tweets to help forecast stock prices?

What an investor thinks →

Absolutely not.

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International Business Machines Corportation (IBM)

One of the oldest corporations in the stock market
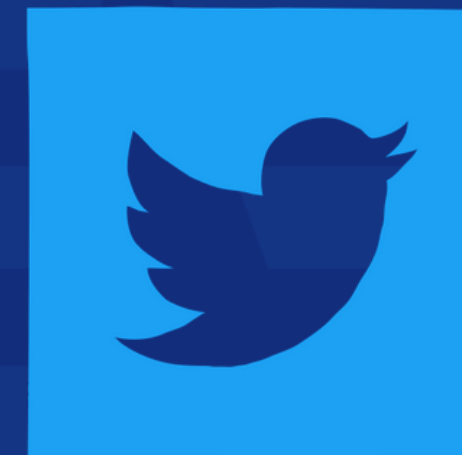
Major research organization within the IT sector

Stock prices highly affected by IT industry trends and new technologies

Data

IBM daily stock prices

IBM daily tweets since 2012

METHOD

Process

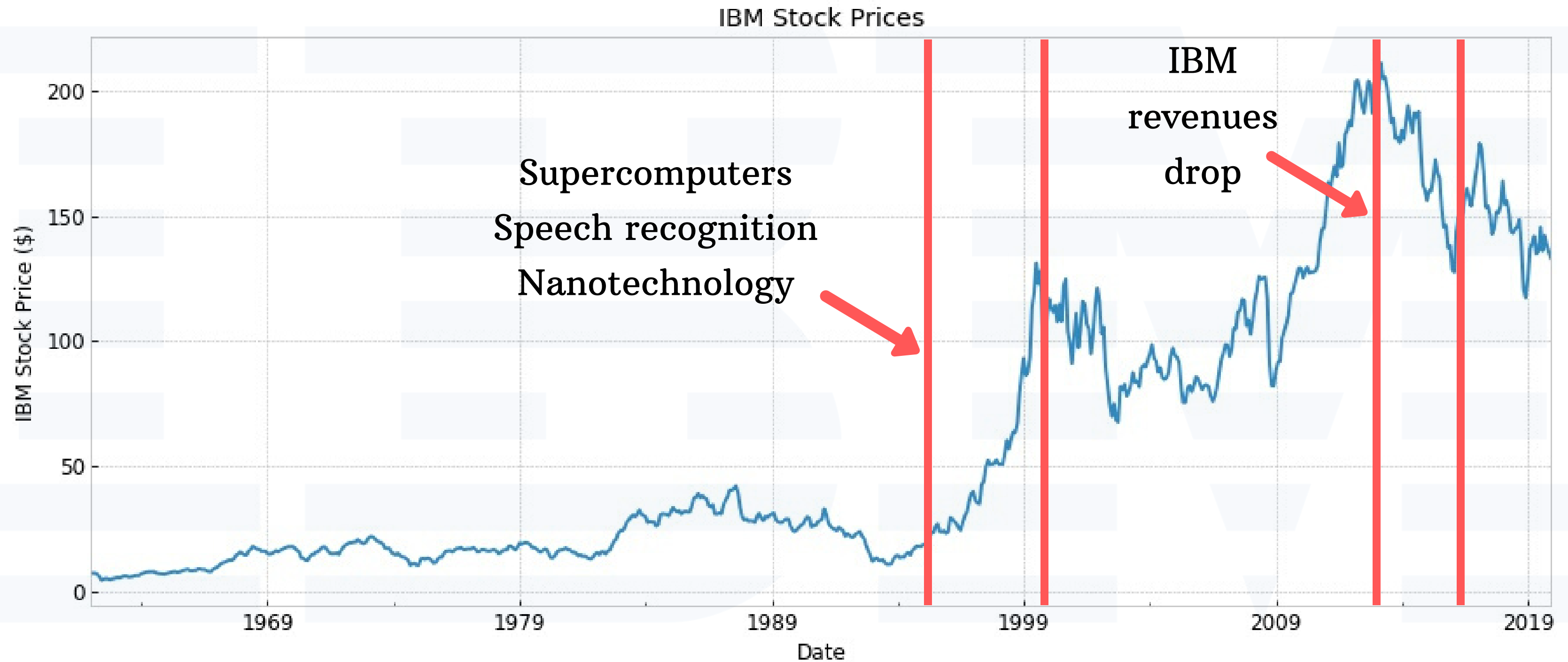Analysis + Cleaning

Forecast
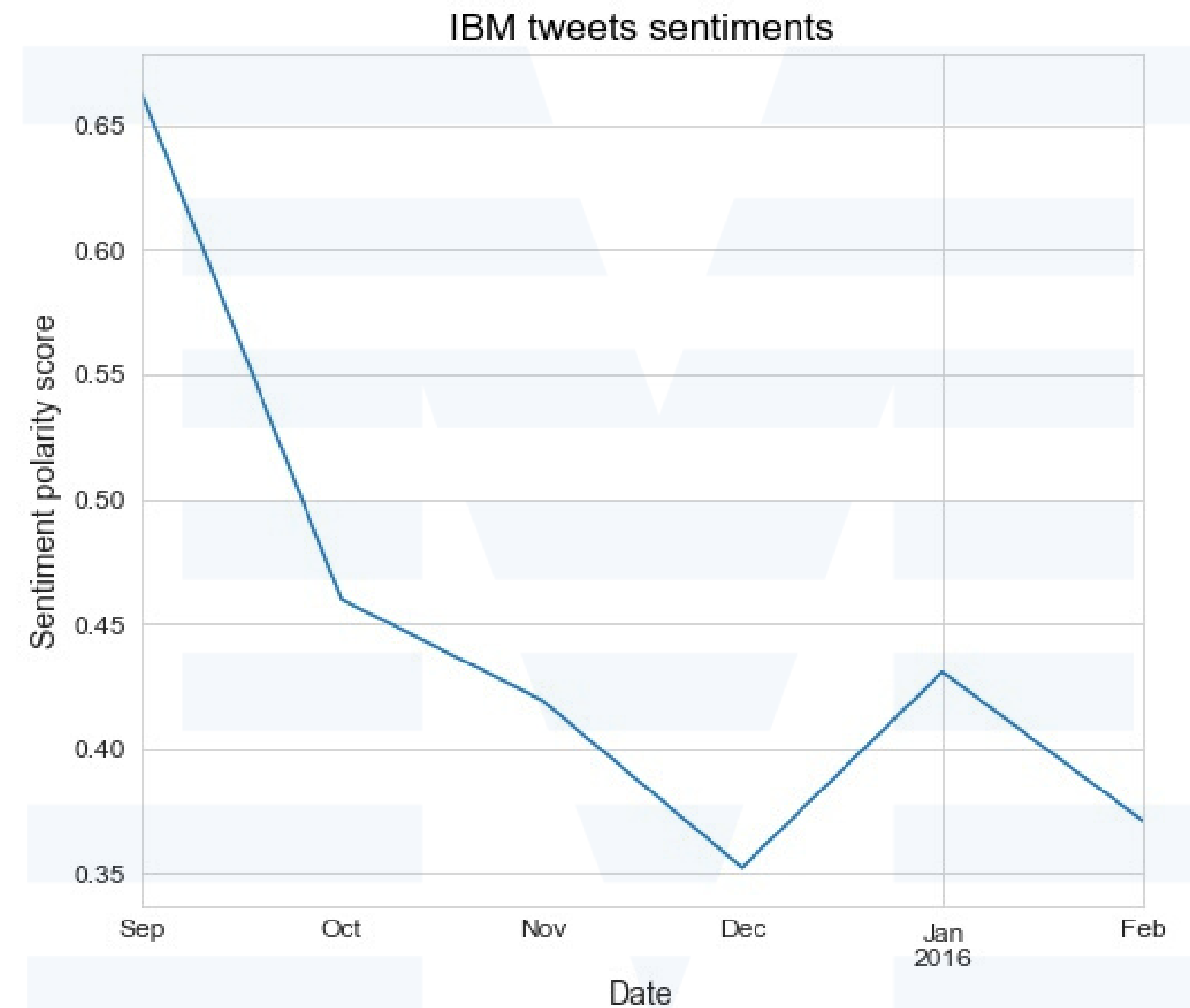
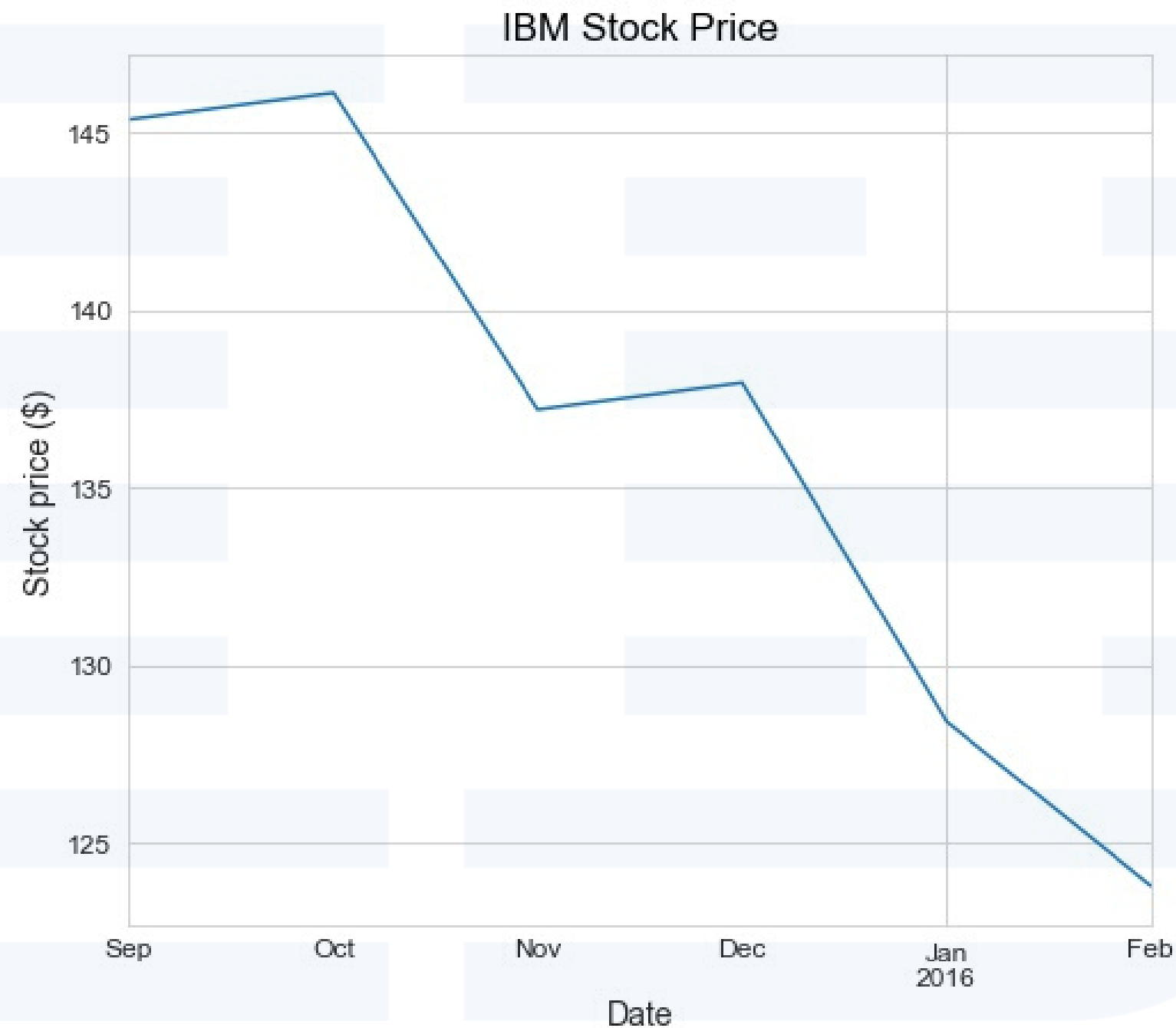Train and test models

Select models

Sentiment Polarity

Sentiment analysis

Tweets extraction

IBM Stock prices - historical data

IBM Stock Prices

Supercomputers
Speech recognition
Nanotechnology

IBM
revenues
drop

Stock price vs tweets sentiment

IBM Stock Price

IBM tweets sentiments

p-value < 0.0001

TOP WORDS FROM IBM'S TWITTER ACCOUNT

Training model with stock price

Forecast attempt

Forecasted price of IBM stocks for 2020
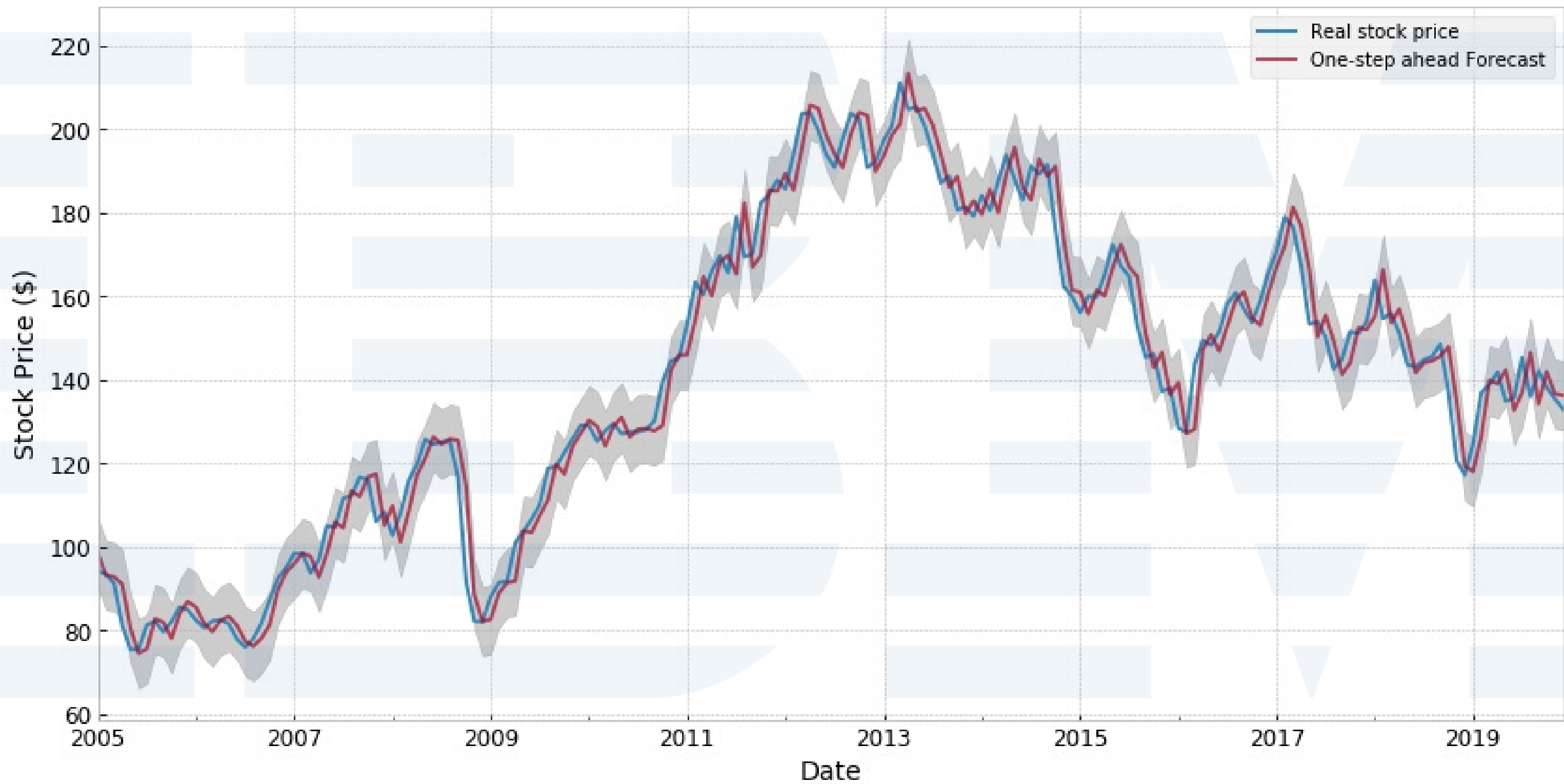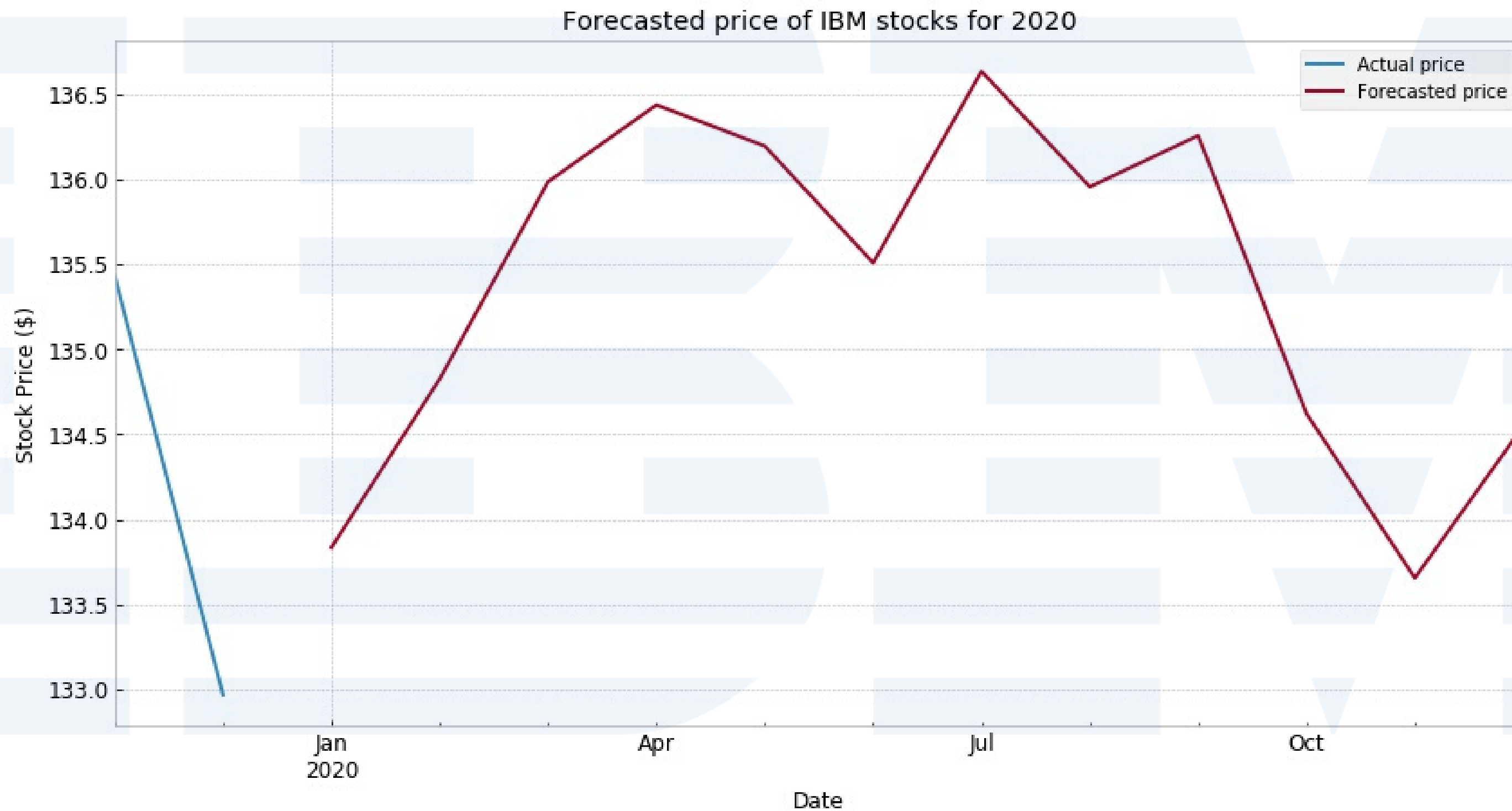
Conclusions

Predictions can't rely on previous day stock price exclusively

IBM tweets sentiments feature is not enough to improve forecast

Invest today in IBM stocks

You can invest in IBM's stocks at your own risk and make some cash (or not)

NEXT STEPS FOR IMPROVED ACCURACY

More features

- Other sources of news
- Include IBM's profitability and revenue growth

More stocks

- Get stocks per minute

More models

- Use deep learning models and neural networks

More tests

- Test models with different parameters

THANK YOU.
ANY QUESTIONS?

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