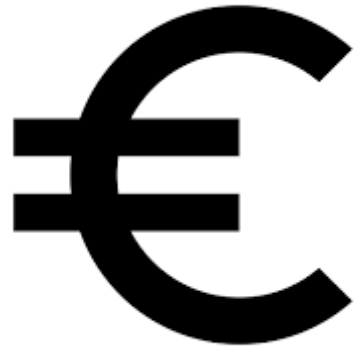
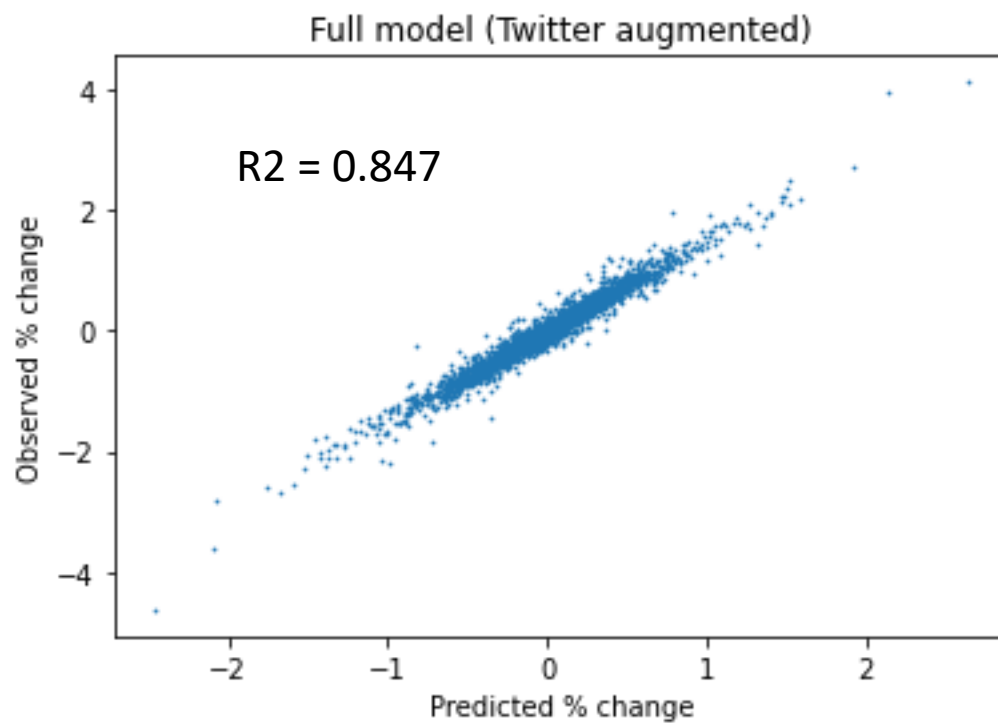
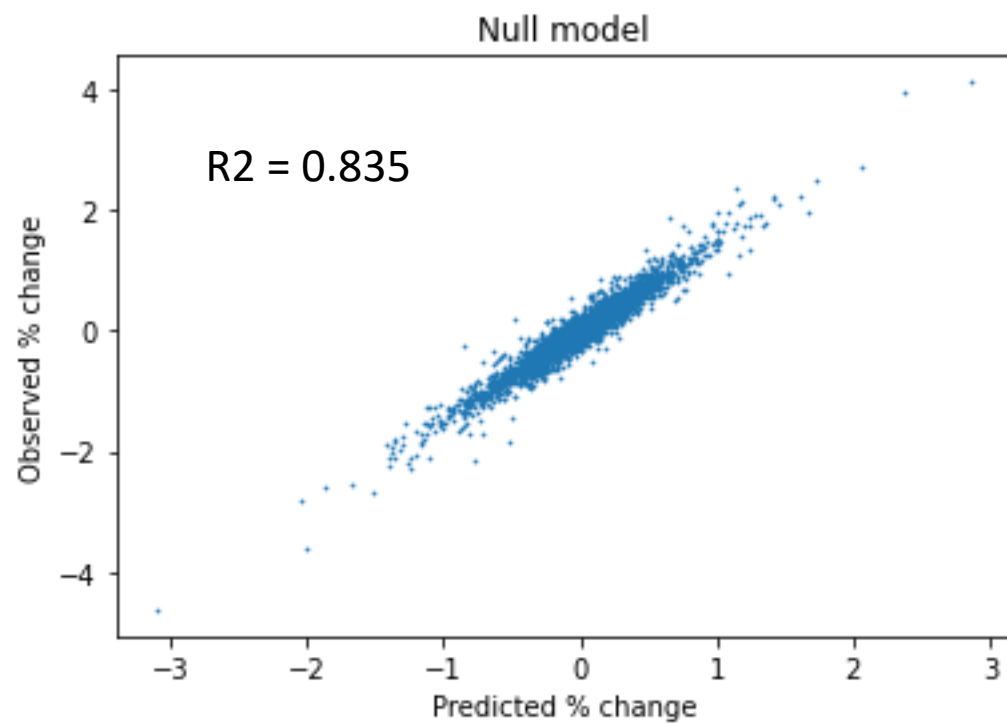


Prediction of EUR/USD exchange rate

- Currency prediction relevant to reduce losses due to currency fluctuations.
- EUR is the second most important currency worldwide
 - Companies doing business in Europe
- Expectation around currency influences its demand
- Use twitter to capture echoes of these expectations
- Potential approach to improve currency predictions (EUR)



- Historical EUR/USD exchange ratio from the European Central Bank (ECB)
- 1.9 million tweets about the ECB and Europe's economy (2008-2022; snsrape)
- VADER python package to predict the negativity of each tweet
- Predictors
 - Summary of the negative sentiment per day (Mean, quartiles, etc...)
 - Previous EUR value (moving average of previous 5, 10, 60 and 120 days)
- Used to predict percentage change of EUR/USD value
 - $(\text{previous} - \text{current}) / \text{previous} * 100$
- Model comparison (random forest)
 - Base model (only previous EUR value)
 - Full model (twitter sentiment + previous EUR value)



Predictive power increased around 1%

- Twitter negative sentiment around Euro has potential to improve the prediction of its value
- Next steps:
 - Cross validation and parameter optimization
 - Try other models
 - Improve definition of the base model
 - Consider twitter sentiment of previous days
 - Extend to other currencies