

A PRESENTATION ON :

FOREIGN EXCHANGE

PP22/T616

TEAM NLP

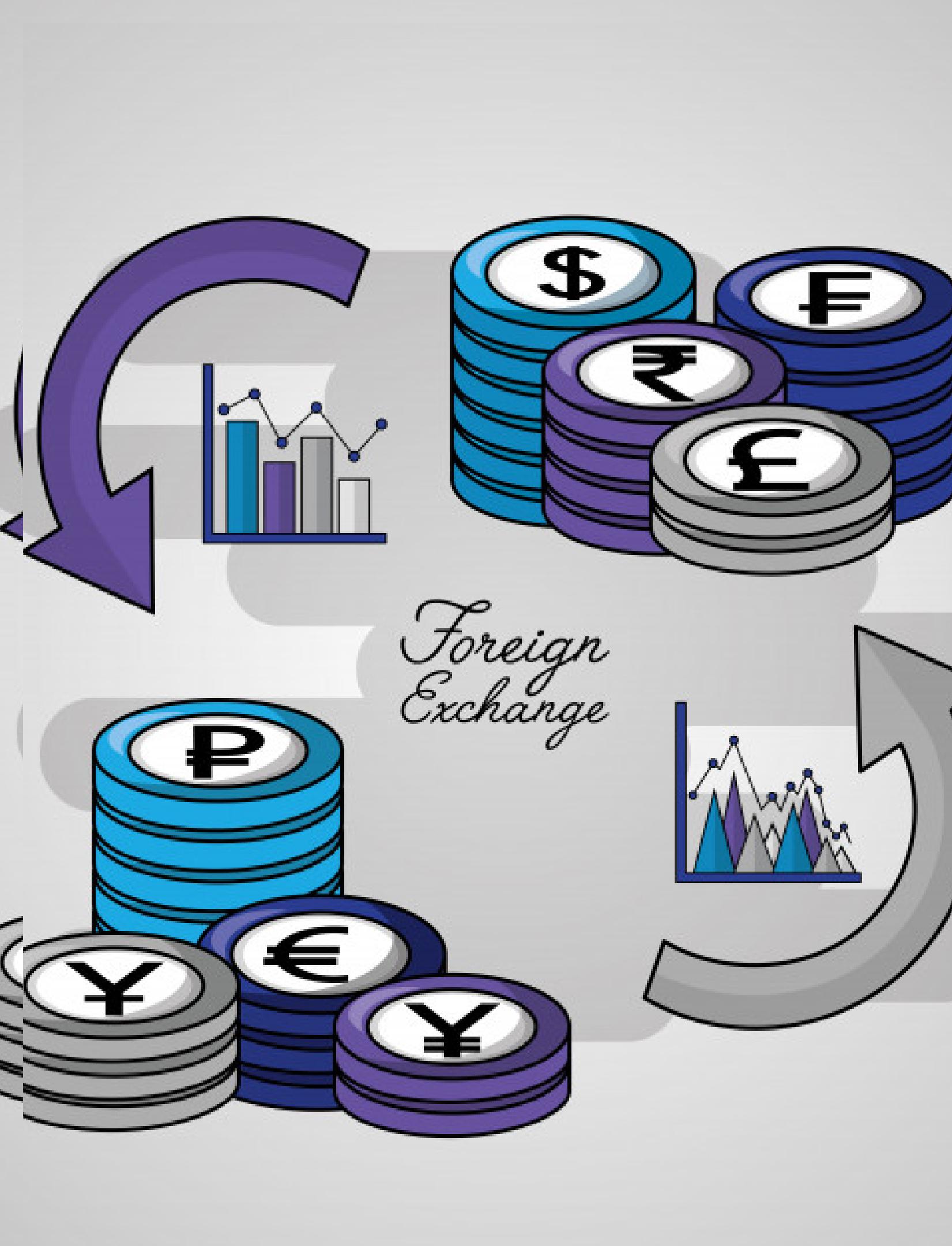
Presenters: Fatima Alhassan & Ogunlana Oluwaseyi



OUTLINE

- 1. Problem Statement**
- 2. Introduction**
- 3. Objectives**
- 4. Methodology**
- 5. Results**
- 6. Conclusion**
- 7. Recommendation**
- 8. Team**

INTRODUCTION



Foreign exchange rate, or FOREX rate is the value of one currency in terms of another. The foreign exchange market determines FOREX rates which often fluctuate based on transactions between traders.

For instance, the foreign exchange rate of Naira to Dollar is 415.76. This implies that it takes 415.76 Naira to buy a Dollar.



PROBLEM STATEMENT

The climbing rates of international trades and financial developments are dependent on exchange rates. In developing countries, the input structure of production depends on imported capital and intermediate goods. An increase in exchange rates makes import production inputs more expensive and thus negatively affects economic growth.

The ability to predict the changes in exchange rates will guide decision-making in the production sector as well as other sectors of developing economies.

OBJECTIVES

- 1. Train a machine learning model to predict future exchange rates using time series analysis.*
- 2. Obtain a broader view of the foreign exchange patterns of different countries.*

METHODOLOGY

**THE FOLLOWING LIBRARIES AND ALGORITHM
WERE USED FOR ANALYSIS AND PREDICTION:**

- 1. Data extraction*
 - 2. Data transformation*
 - 3. Exploratory data analysis*
 - 4. Forecasting*
 - 5. Model building*
-

ABOUT THE DATASET

The data contains foreign exchange rates for different nations from the years 2000 up until 2019.

CODE

The Link to the collaboration repository:

https://github.com/mikekwabs/NLP-Hamoye/blob/master/Time_Series_Prediction_FOREXR.ipynb

DATA VISUALIZATION

<https://github.com/Manoj-Kumar-MP/Premier-Project/blob/main/Foreign%20Exchange.ipynb>

FORECASTING AND MODEL BUILDING

https://github.com/Pleasant0778/nlp-premier-project/blob/main/nlp_Premier_project.ipynb

DATA VISUALIZATION

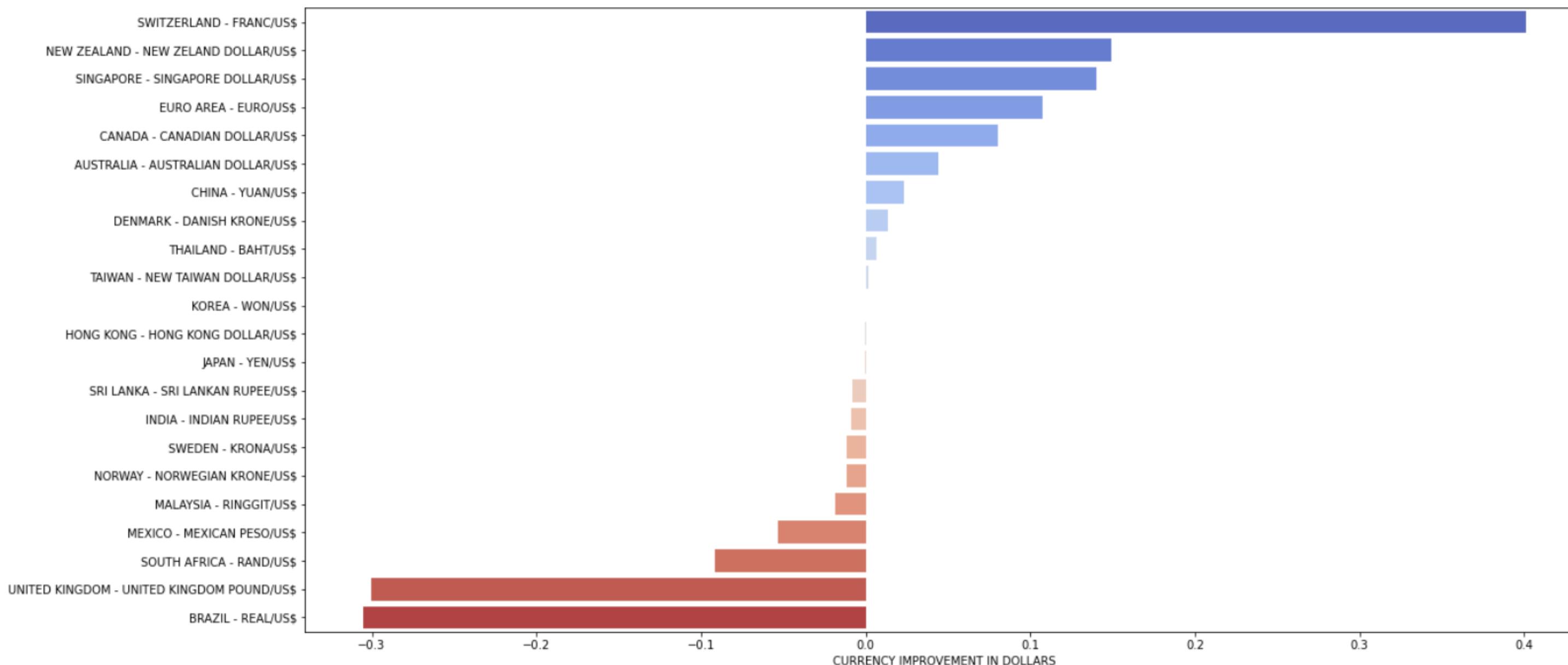
Identifying the country with the highest FOREX rates -UK



DATA VISUALIZATION

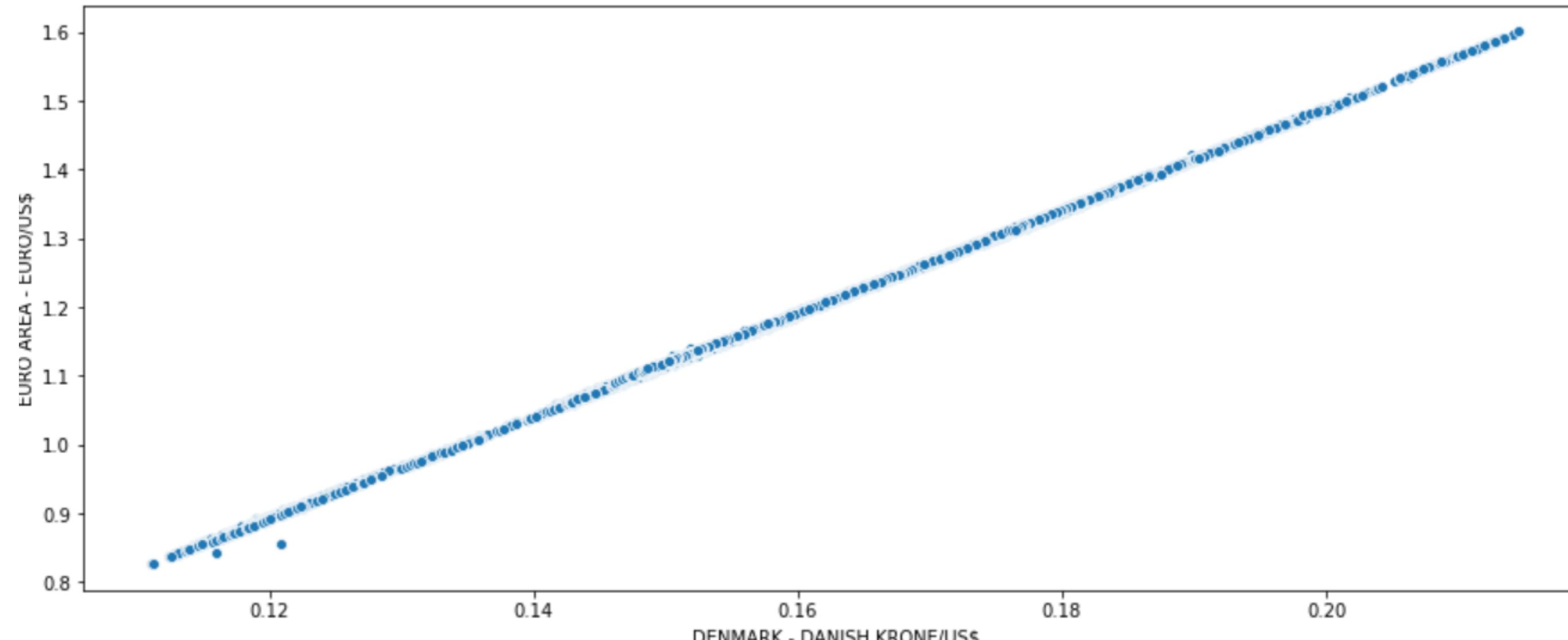
Showing currency improvements across the countries

Red - negative growth; Blue - positive growth



DATA VISUALIZATION

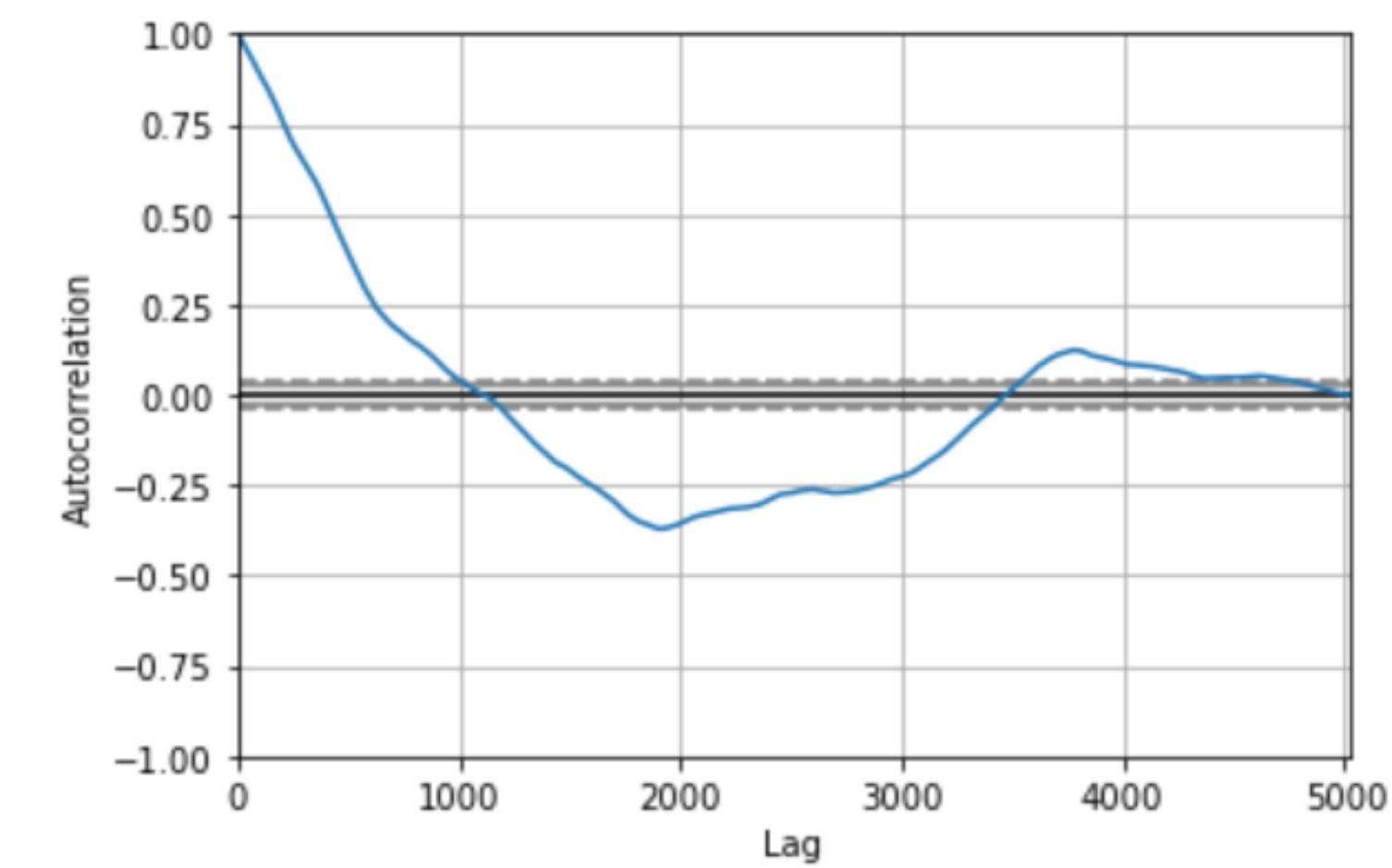
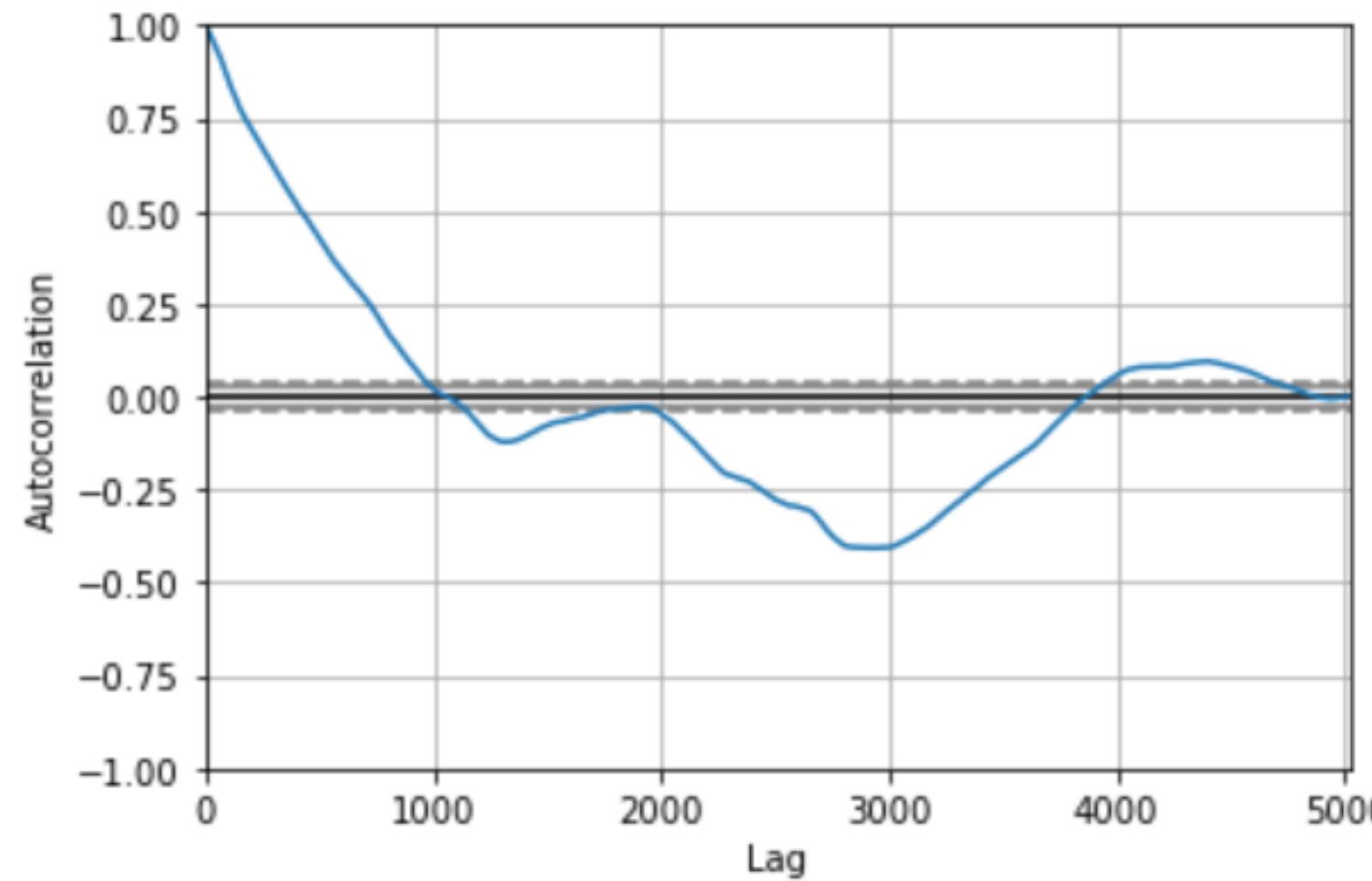
Showing a perfect correlation line between Denmark and Euro



We can see a Pure Simple Regression line

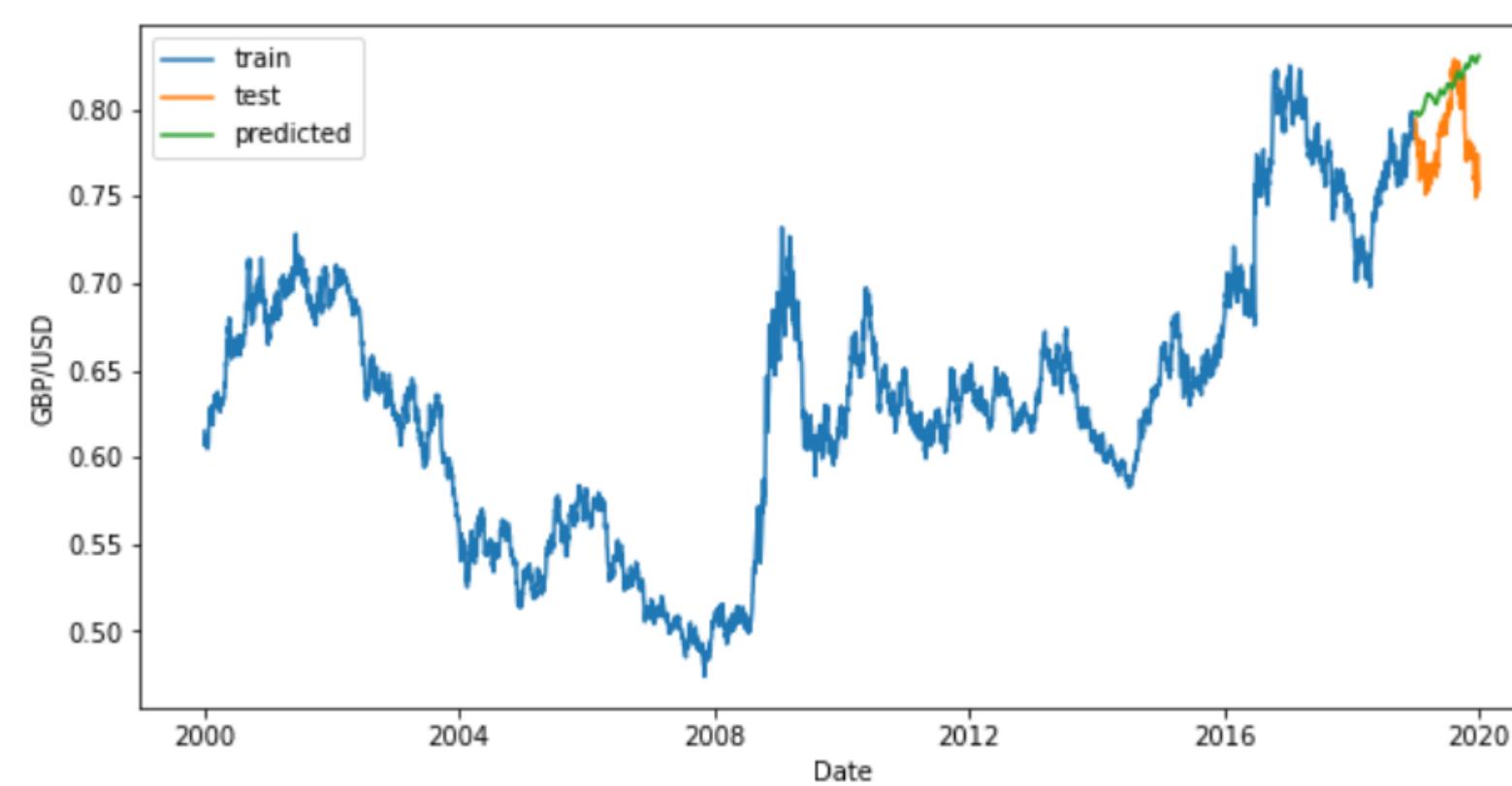
FORECASTING

Showing positive and negative trend correlation in selected countries.

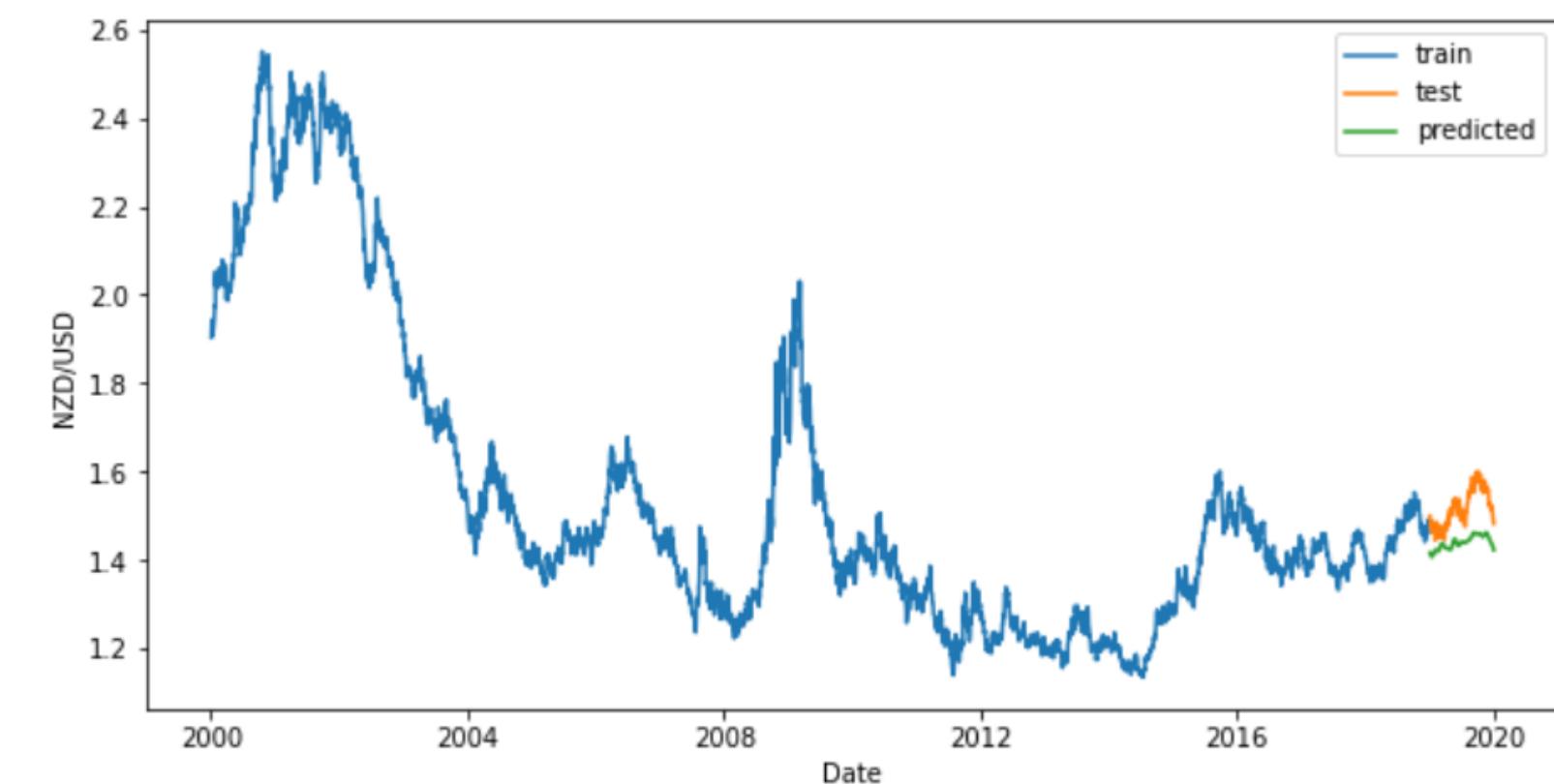


MODEL BUILDING

Showing predicted models for selected countries



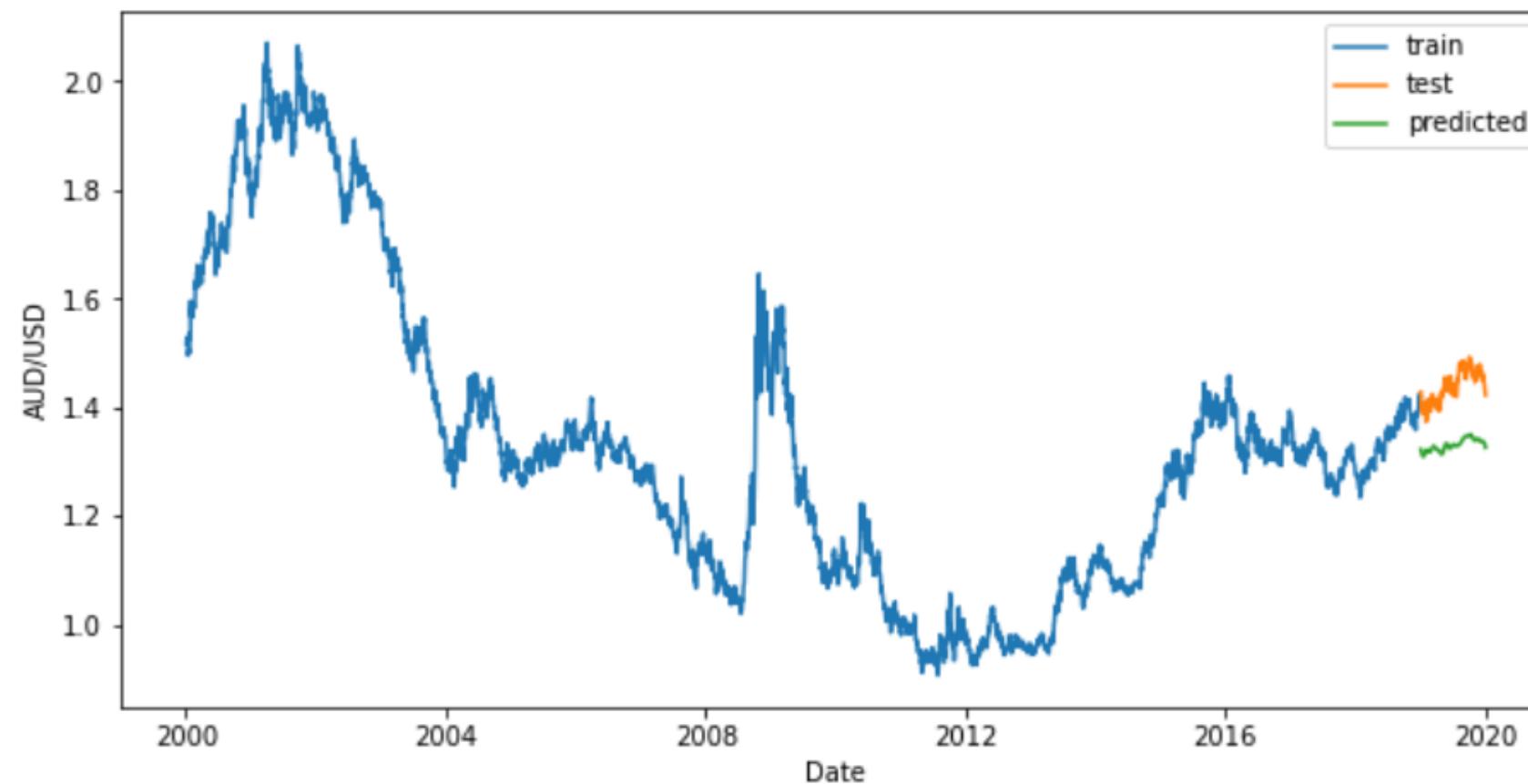
The mean absolute error for GBP is : 0.030984974020624636
The mean squared error for GBP is : 0.001317804282518754



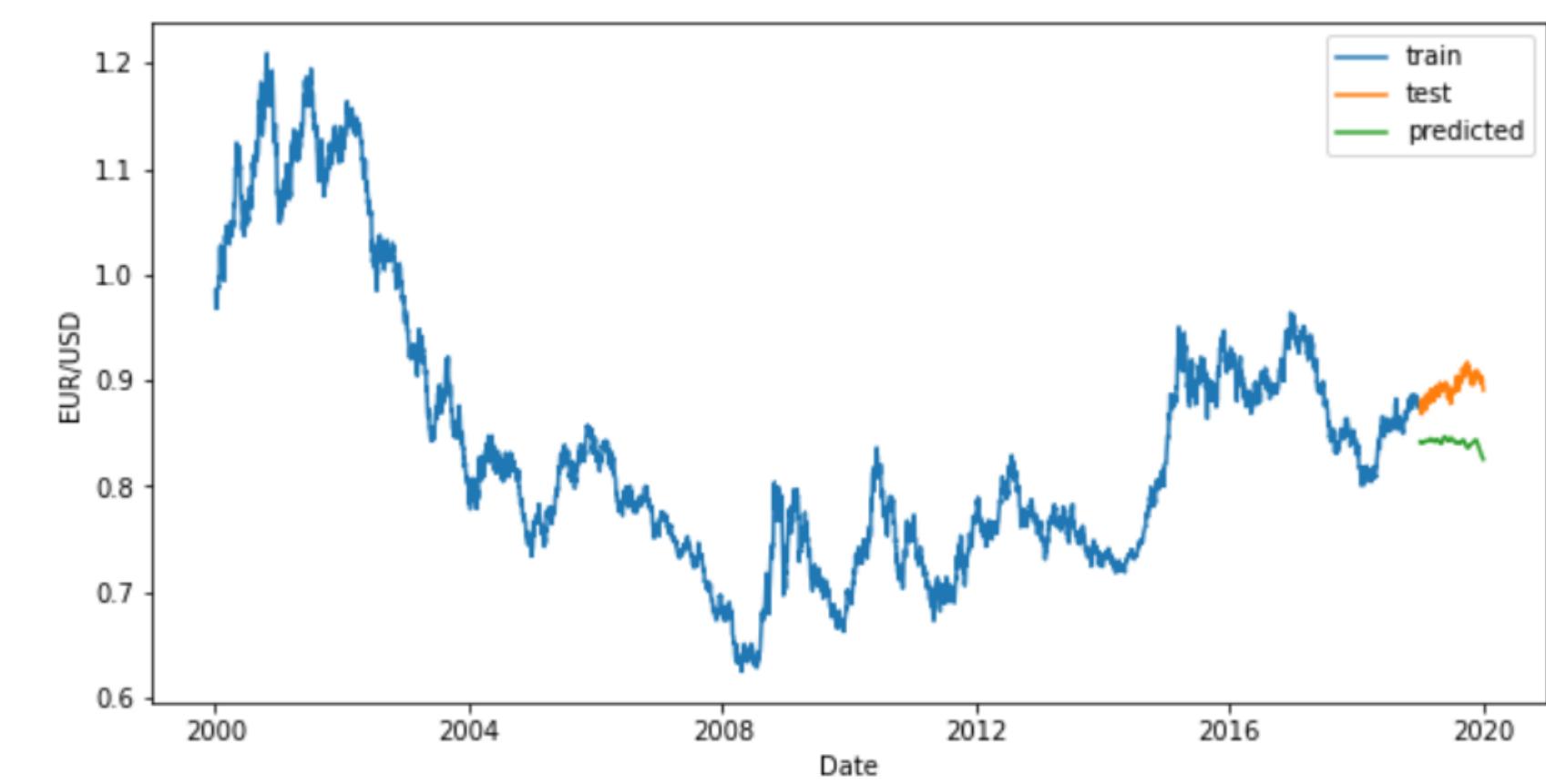
The mean absolute error for NZD is : 0.07874937886778015
The mean squared error for NZD is : 0.0071250916076285985

MODEL BUILDING

Showing predicted models for selected countries



The mean absolute error for AUD is : 0.10825145741490602
The mean squared error for AUD is : 0.012149893273436841



The mean absolute error for EUR is : 0.052294241246066145
The mean squared error for EUR is : 0.0028860002268576985

CONCLUSION

The foreign exchange market has a direct impact on wages, cross-border investments, and the economy as a whole. Financial institutions, companies, governments, and other entities use this market to adjust their currency holdings. This indicates the need to obtain accurate evaluations and predictions of market trends. This study proposes a means of utilizing data science technology to evaluate and predict such trends within a country's economy relative to its US dollar equivalent.

RECOMMENDATION

- More EDAs such as the difference between the average of the previous years can be conducted.
- Application of log transform can be encouraged to see if the data will be stationary.
- Machine Learning models like linear regression, random forest regressor can also be utilized.

NLP

The NLP team is comprised of members from different course study groups: Data engineering, technical writing, and data science. They were under the leadership of:

1. Halimat Atanda
2. Aniefiok Udoh Nicholas
- 3.



Do you have any questions?



Thank you!

Feel free to approach us
if you have any questions.

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