XchangeRatePredictor

Every Nickel Counts

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Motivation

- International students often transfer money from abroad for expenses and college fees.

- Just in time transfers, leave us at the mercy of the prevailing exchange rate.

- An exchange rate forecast can guide students and travelers, whether waiting for a few days can give more bang for the buck.

- It could also guide traders of currency futures / options to devise strategy. (Although as a former misguided enthusiast of investing in markets, I would totally advise you against it!!)

Data Description

- Data Source: Exchange rates API (a free service for current and historical foreign exchange rates published by the European Central Bank)
- Fields:

  - Base currency

  - Rates:

    - Date for the exchange rate quote

    - Closing exchange rate for each global currency

Model Evaluation

- 3 currency pairs: USD-INR, USD-EUR, USD-GBP

- ARIMA models evaluated for each pair separately:

  - Training period: 2017-05-30 to 2019-05-21

  - Forecasting/evaluation period: 2019-05-22 to 2019-05-30

- Success Measure: The Mean Absolute Percentage Error (MAPE) for the rate predictions should be less that 15%.

- Results:

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| CURRENCY | P | D | Q | MAPE     |
+----------+---+---+---+----------+
| EUR      | 2 | 1 | 0 | 0.20155  |
| GBP      | 0 | 2 | 0 | 0.48996  |
| INR      | 1 | 1 | 0 | 0.194299 |
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```

Lessons Learnt

- While the models used can forecast the exchange rate during the normal course within a very low range of error, they can not predict big fluctuations due to major events.

- Think of BREXIT, trade wars, a surprise interest rate hike by the Fed, impact of a rise/fall of oil prices in case of certain economies, etc.

Thank You!

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