Exchange rates and Forecasting

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Outline

- Motivation
- Data
- The Proposed Model
- References

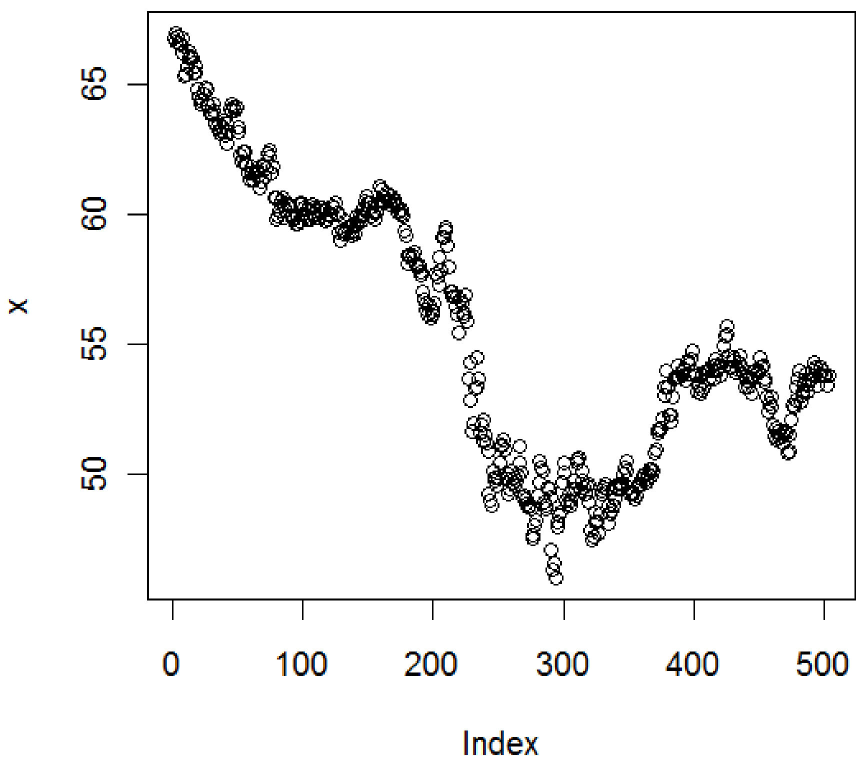
Motivation

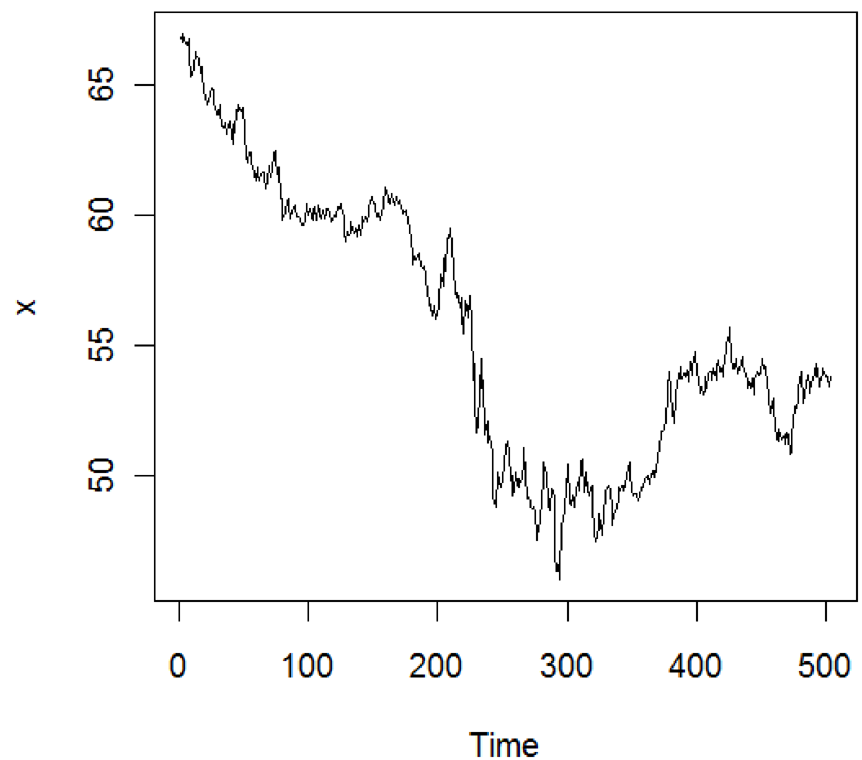
In order to enter a Economic Globalization phase, every country should depend each other. So how to operate futures and options is an important thing. The following I will use the past data of exchange rates to forecasting the further information.

Introduction to this data

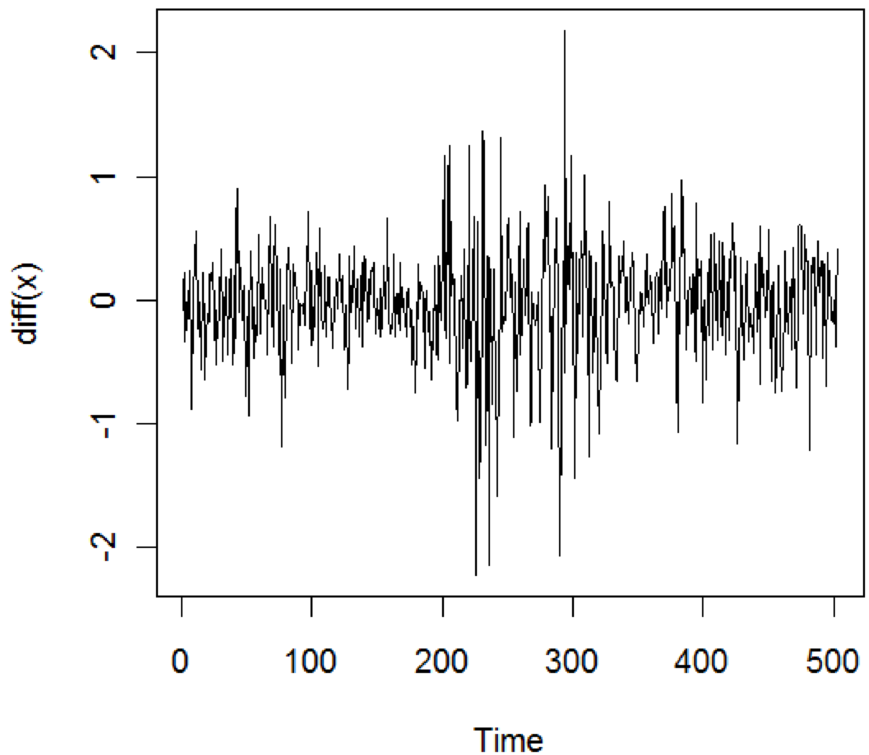
The data of exchange rates which I search are between Taiwan and Britain. They will help me to forecasting.

Time series plot for the data





Difference of the data



Proposed methods–GARCH

- If an autoregressive moving average model (ARMA model) is assumed for the error variance, the model is a **generalized autoregressive conditional heteroskedasticity** (**GARCH**, Bollerslev(1986)) model.
- In that case, the GARCH(p, q) model (where p is the order of the GARCH terms and q is the order of the ARCH terms) is given by

$$\sigma_t^2 = \alpha_0 + \alpha_1 \epsilon_{t-1}^2 + \cdots + \alpha_q \epsilon_{t-q}^2 + \beta_1 \sigma_{t-1}^2 + \cdots + \beta_p \sigma_{t-p}^2 = \alpha_0 + \sum_{i=1}^{q} \alpha_i \epsilon_{t-i}^2 + \sum_{i=1}^{p} \beta_i \sigma_{t-i}^2$$

References

- http://www.cosmosbank.com.tw/rate_jsp/rate-7.jsp
- http://zh.wikipedia.org/zh-tw/

Thank you
for your attention