**Jounal : Alexandria Engineering Journal**

**Title : Forecasting COVID-19 cases by assessing control-intervention effects in Republic of Korea: a statistical modeling approach**

**1. Data**

Daily confirmed local COVID-19 case numbers for the Republic of Korea were collected from July 2020 to March 2021, as provided by the KDCA [5]. S1 Table describes the summary of observed cases from the data.

**Data folder – dfone\_Korea.xlsx**

**2. Model simulation**

**Code: Main\_Code.html**

**Section 1. Estimation of transmission rate**

Describe how to estimate the transmission rates and compare the observed cases with the estimated cases.

S4 Table shows the time-dependent reproduction number by estimating the transmission rates.

**Functions : function\_fig\_ode\_comp.R, function\_forecasting.R, function\_ode.R**

**Result folder – ode\_fit\_Korea.xlsx, para\_table\_dfp\_Korea.xlsx**

**Section 2. COVID-19 case forecasting according to CII**

It takes time to simulate the forecasting procedure. So, the results are shown in the excel file **“Forecast\_excel\_load\_Korea.xlsx”** in Result folder. From loading the excel file, we compared the transmission dynamics of COVID-19 according to the different CII. Figure 7 and S7 Table is shown in the manuscript.

Result folder: Forecast\_excel\_load\_Korea.xlsx

**3. Distribution of instantaneous reproduction number according to CII**

Describe how to estimate the probability distribution of the instataneous reproduction number with the 10 days of delay. S6 Table and S5 Figure are shown in the manuscript.

**Code – Rcode folder - EstimationRt.R**

**Result: Result folder – Rt\_lag\_Korea.xlsx**