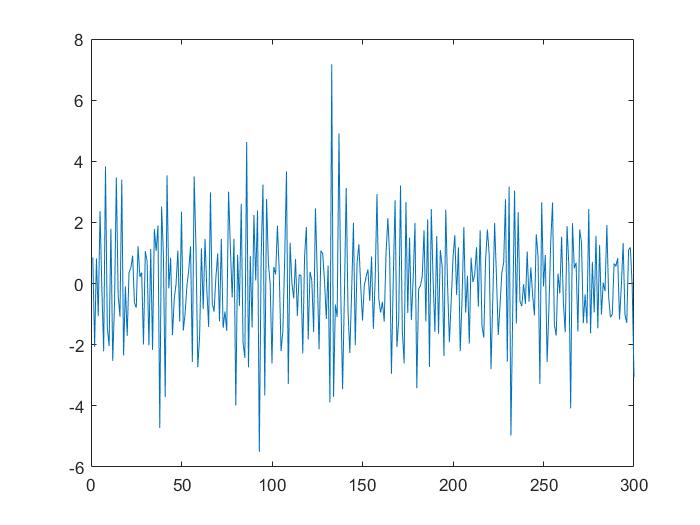
Q2 

MATLAB Commands Used:

Time series for Q2 is imported to MATLAB. Timeseries is imported as a table, which needs to be converted into an array.

**B = table2array(EE627AHW2Q2);**

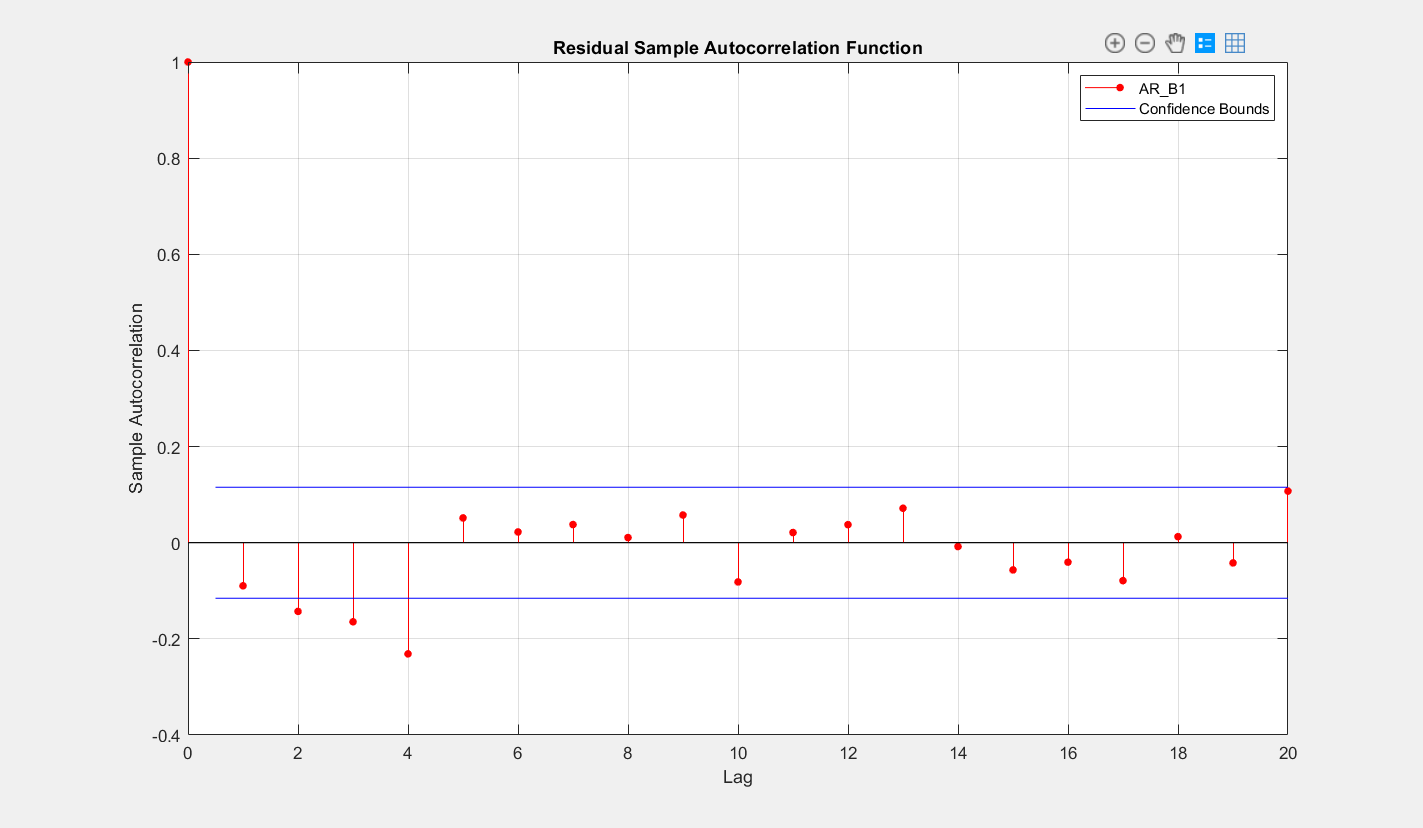
**plot(B)**

B is imported to Econometric toolbox to plot PACF and ACF.

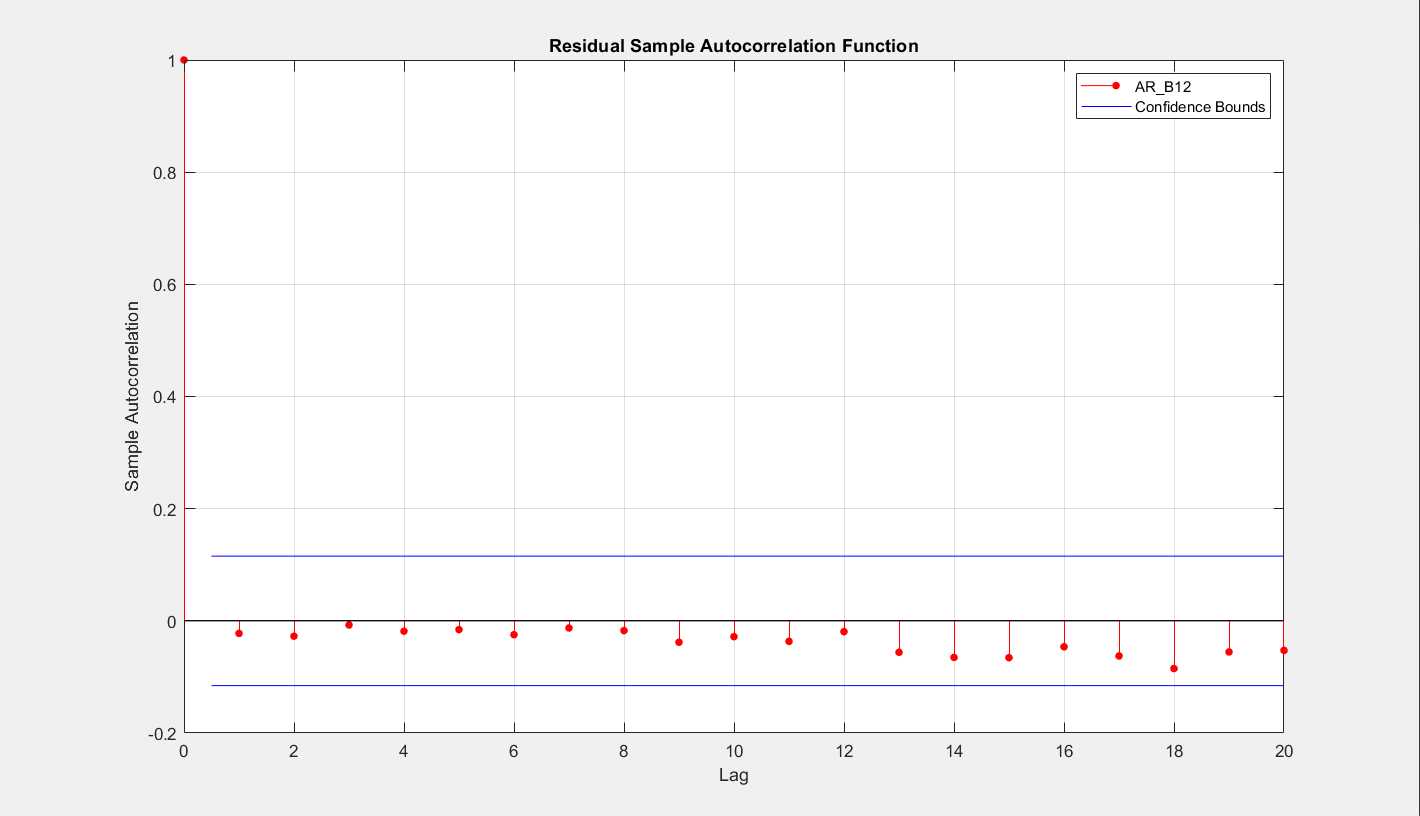
Following which a model is created.

The models I created are given below with residual auto correlation:

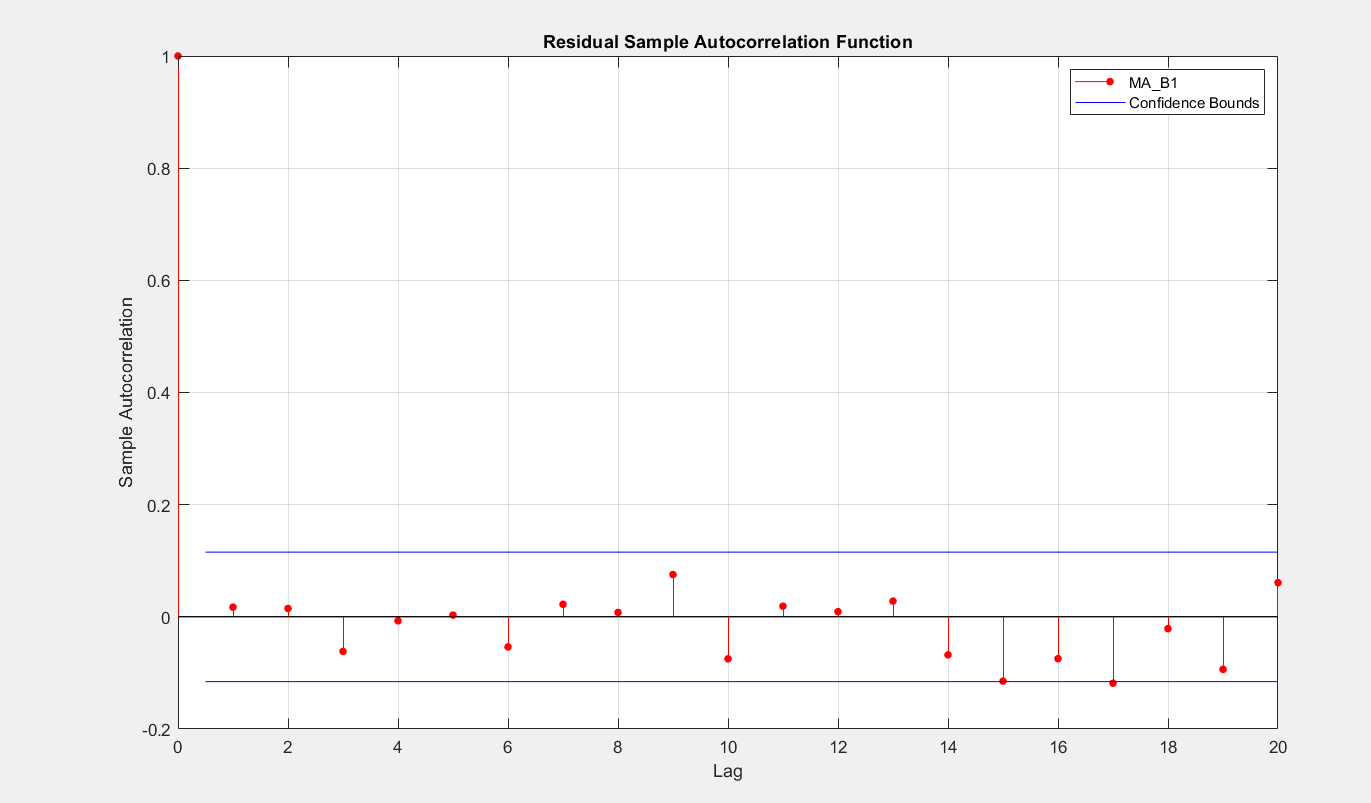
1. AR(3)



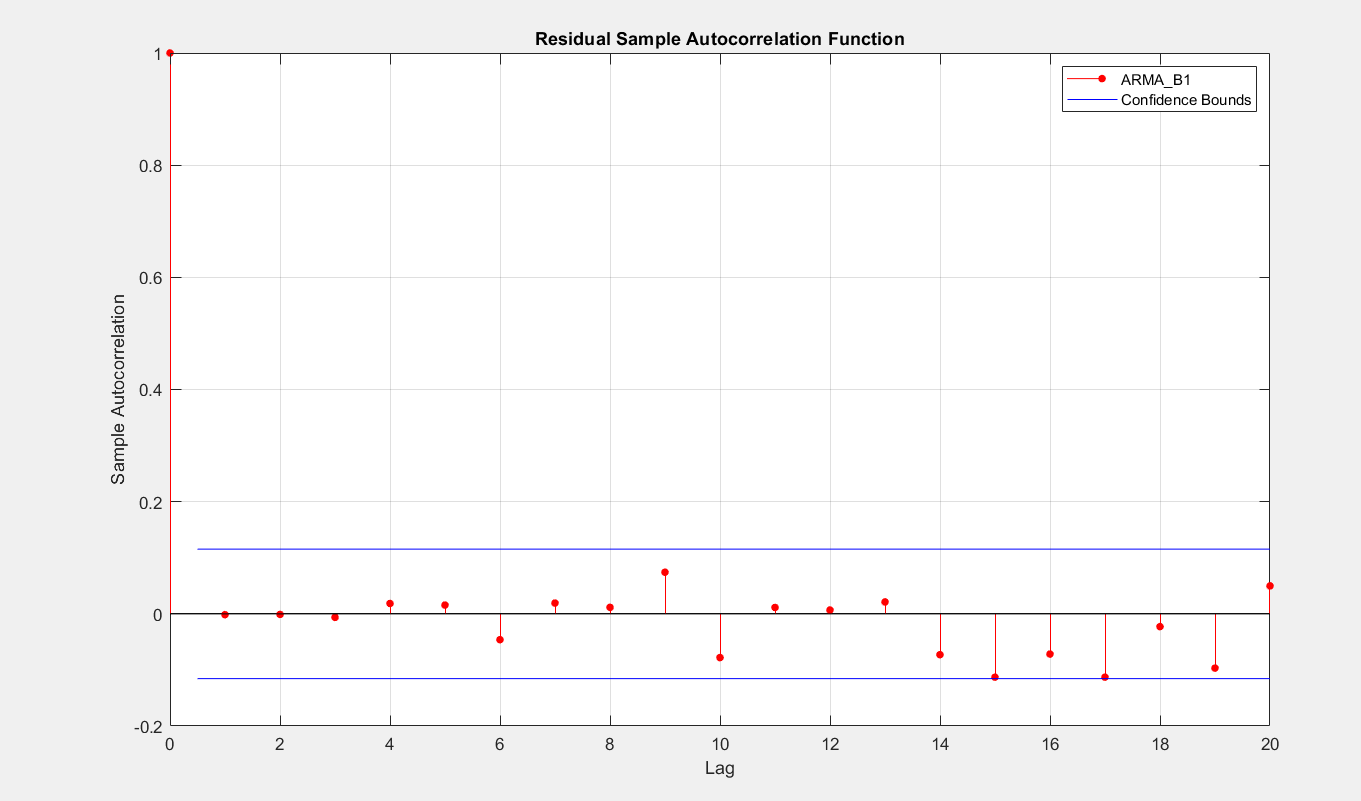
1. AR(20)



1. MA(3)

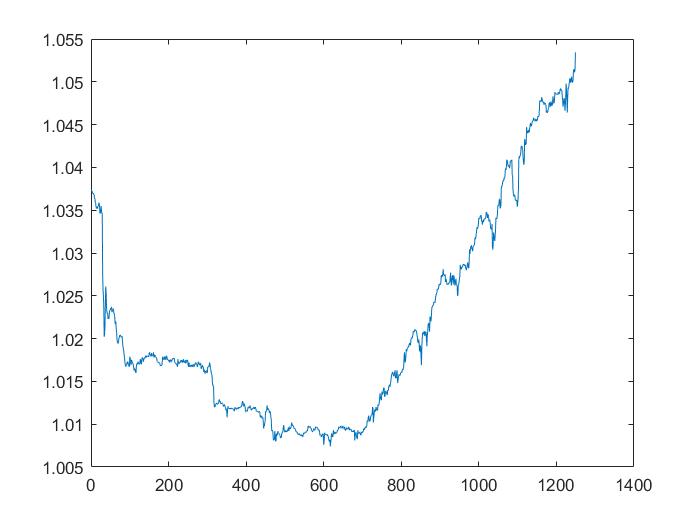


1. ARMA(3,3)

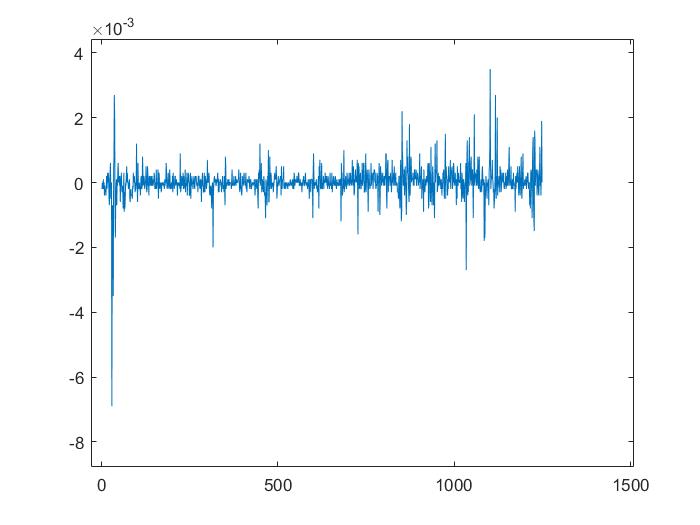


According to observation AR(20), MA(3) and ARMA(3) are best fit models. But since the one with least error terms are considered MA(3) would be a preferred model.

Q3

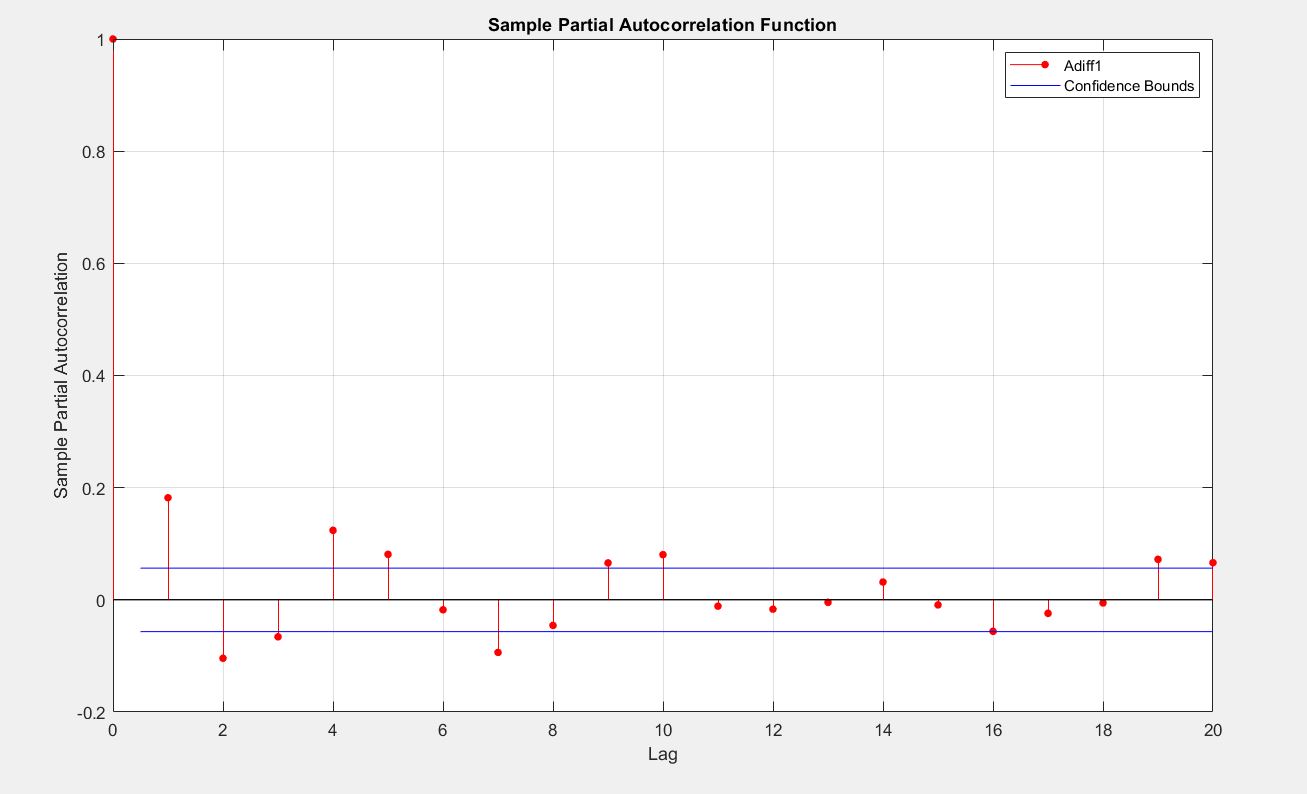


The time series is non – stationary thus, convert into stationary by taking difference. Using **diff(xt)** in MATLAB.

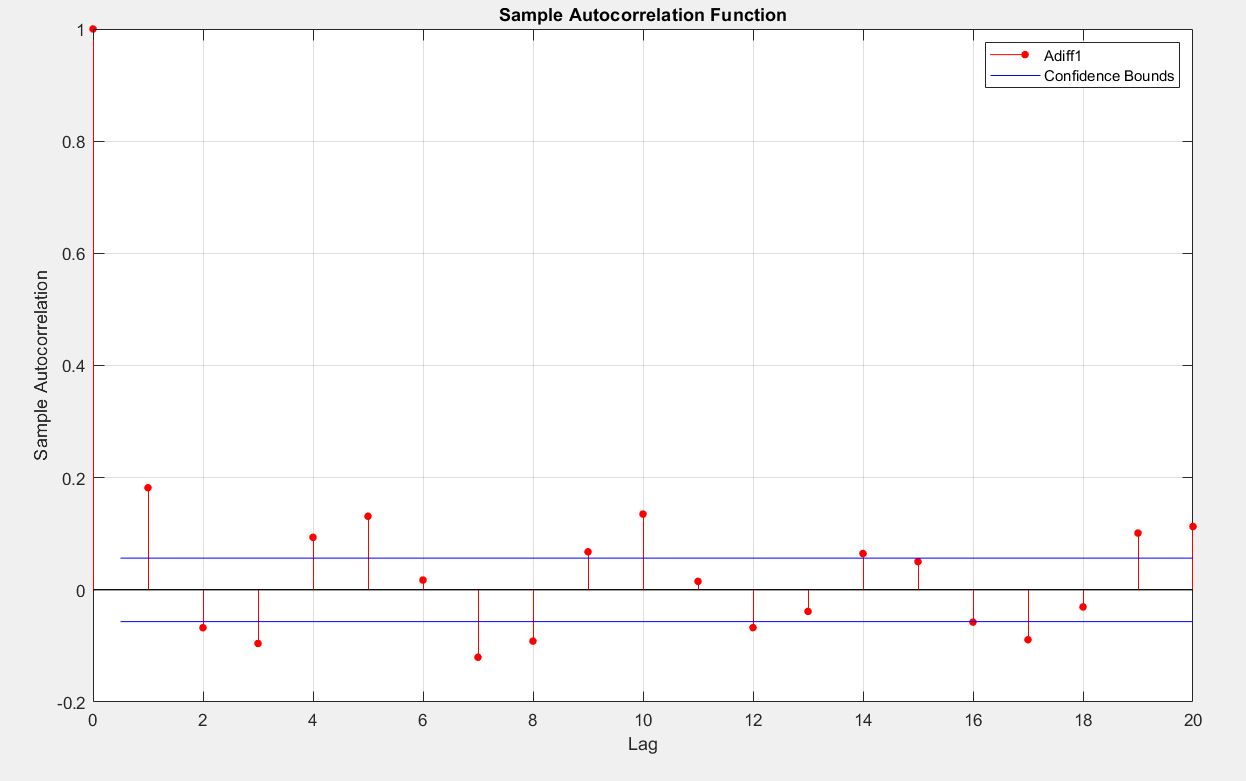


The Un-stationary signal is converted to Stationary Signal.

1. PACF

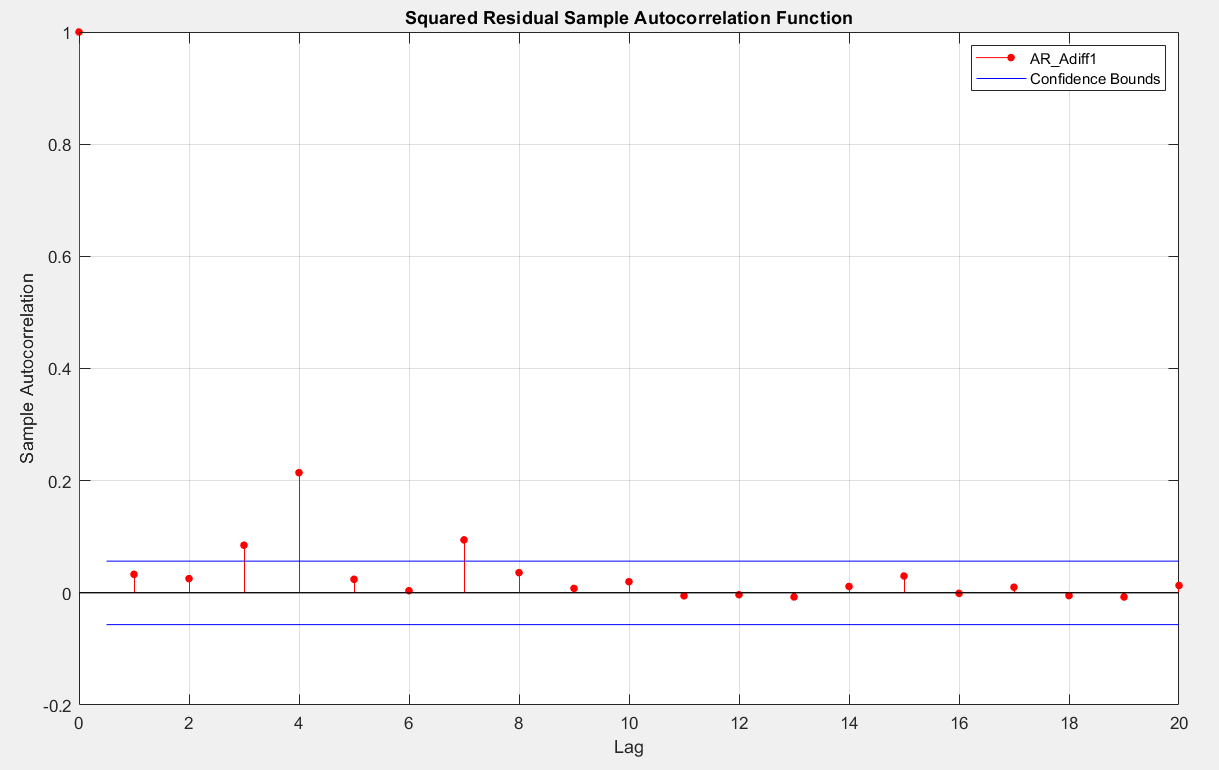


1. ACF

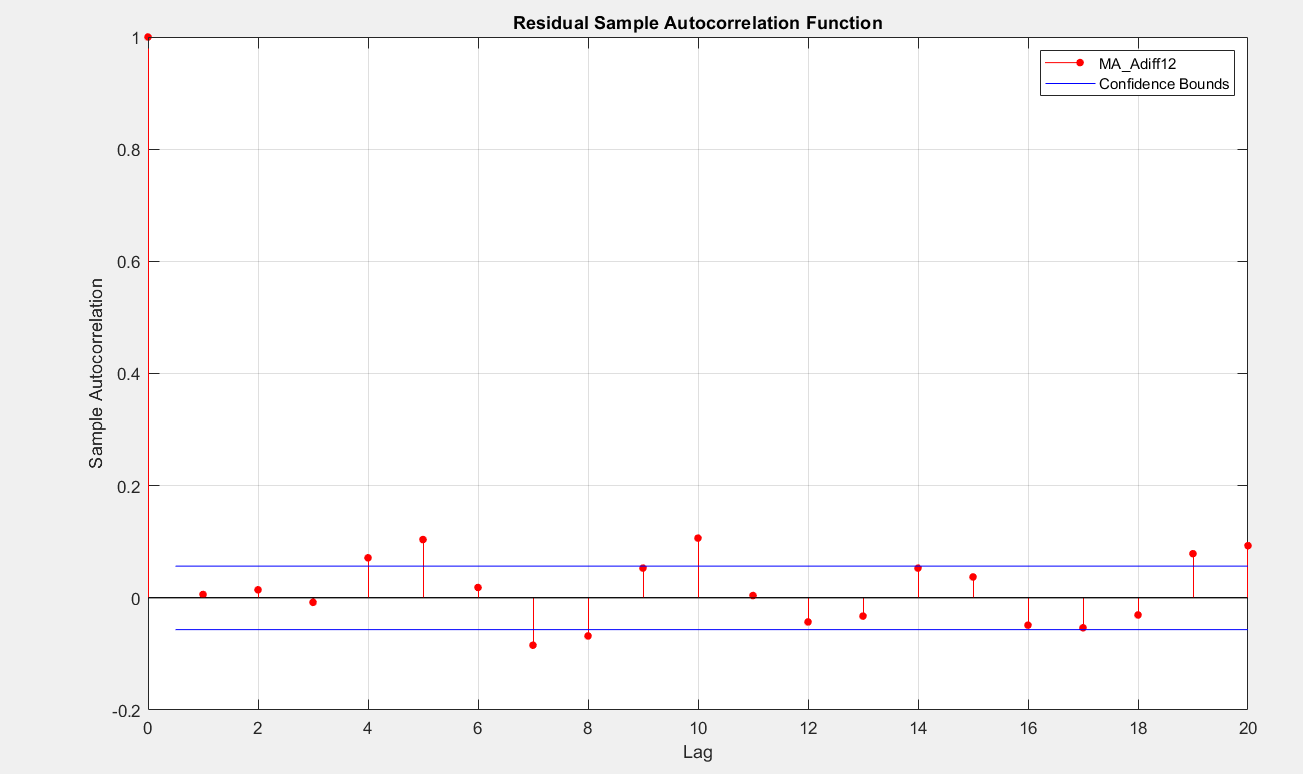


Models:

1. AR(3)



1. MA(3)



1. ARMA(3,3)

