

MATH 5075 R Project 10

Your Name Here

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*Remember: I expect to see commentary either in the text, in the code with comments created using #, or (preferably) both! **Failing to do so may result in lost points!***

Problem (Shumway and Stoffer Problem 5.12, Blue Edition)

Consider the data set `econ5 (astsa)` containing quarterly U.S. unemployment, GNP, consumption, and government and private investment from 1948-III to 1988-III. The seasonal component has been removed from the data. Concentrating on unemployment (U_t), GNP (G_t), and consumption (C_t), fit a vector ARMA model to the data after first logging each series, and then removing the linear trend. That is, fit a vector ARMA model to $\mathbf{x}_t = (x_{1t}, x_{2t}, x_{3t})'$, where, for example, $x_{1t} = \log(U_t) - \hat{\beta}_0 - \hat{\beta}_1 t$, where $\hat{\beta}_0$ and $\hat{\beta}_1$ are the least squares estimates for the regression of $\log(U_t)$ on time, t . Run a complete set of diagnostics on the residuals.

```
# Your code here
```