BANA7050 Forecasting and Time Series Methods Homework #4 (Case Study #2)

**Case study**

The series analyzed here is the monthly volume of commercial bank real-estate loans, in billions of dollars, from January 1973 to October 1978, a total of 70 observations. The data are derived from reports to the Federal Reserve System from large commercial banks.

Here is the data with 70 observations from January 1973 through October 1978:

46.5 47 47.5 48.3 49.1 50.1 51.1 52 53.2 53.9 54.5 55.2 55.6 55.7 56.1

56.8 57.5 58.3 58.9 59.4 59.8 60 60 60.3 60.1 59.7 59.5 59.4 59.3 59.2

59.1 59 59.3 59.5 59.5 59.5 59.7 59.7 60.5 60.7 61.3 61.4 61.8

62.4 62.4 62.9 63.2 63.4 63.9 64.5 65 65.4 66.3 67.7 69 70 71.4

72.5 73.4 74.6 75.2 75.9 76.8 77.9 79.2 80.5 82.6 84.4 85.9 87.6

For such a data set, check for stationarity, build an ARIMA model, perform data transformation/difference (if needed), model identification, model selection, diagnostic checking, parameter estimation, and forecast the next two years. Write a short report summarizing your results, but **no longer than 5 pages**.

**Instructions on the Case Study:**

Your report should contain a discussion of: (1) data visualization; (2) the identification of the model to be fit together with your rational based upon the appropriate plots and outputs; (3) estimation of the model parameters; (4) diagnostic checking on residuals and possible revision to your model; (5) forecasts for the period in question.

In your report, please embed simple code (right before the corresponding outputs), interpret your outputs, and write a brief discussion.