

Module/Week 7 Homework: Regression Analysis and Forecasting

MGMT 5260: Decision-Making Techniques for Managers

Complete the following regression analysis and forecasting spreadsheet models. Fill out the provided Module/Week 7 Homework Template to solve each of the four questions.

Problem 1: Simple Linear Regression

See the problem description in the *Waiting Time* tab of the template file.

Problem 2: Multiple Regression

See problem description in the *Advertising* tab of the template file.

Problem 3: Forecasting

American Express closing prices are presented in the *Template for Span of 4* tab. Create a moving averages forecasting model **for a span of 4**. Also complete the following:

- a. Calculate Forecasted prices, Errors, Absolute Errors, Absolute Percentage Errors, MAE, and MAPE.
- b. Create three graphs:
 - i. Original observation
 - ii. Forecasted and Original Observations
 - iii. Forecast error

Problem 4: Forecasting

American Express closing prices are presented in the *Template for Span of 5* tab. Create a moving averages forecasting model **for a span of 5**. Also complete the following:

- a. Calculate Forecasted prices, Errors, Absolute Errors, Absolute Percentage Errors, MAE, and MAPE.
- b. Create three graphs:
 - i. Original observation
 - ii. Forecasted and Original Observations
 - iii. Forecast error

Which moving average is better – with a span of 4 or 5? Provide your answer within the template.