

Exam on Topics from Chapters 2 through 11 (1.5 hours)

I.

As the manager of the data analysis department of a company, you have access to sales data (Y_t) for one of the products of the company. With data for n years you are asked to generate forecasts for the next m years based on time trends only.

I.1 (12 points)

List a number of models that you can use to generate the forecasts.

I.2 (10 points)

Describe how you would use part of the data set to estimate the models and test their forecasting ability on the unused data set. Here, assume that there is no problem with serial correlation. Carefully state what criteria you would use to evaluate the models.

I.3 (8 points)

Suppose you have selected three of the models as the “best.” Describe how you would combine their forecasts to generate “better” forecasts. State what you criteria you use to determine what “better” is.

II. (10 points)

Consider the consumption function $C_t = b_1 + b_2 C_{t-1} + b_3 Y_t + b_4 Y_{t-1} + u_t$. Suppose the error terms u_t follow the AR(4) process. Describe step by step how you would generate forecasts of C_t , conditional on the forecasts of Y_t generated by a procedure similar to the one described in (I.3).