

EE325 STATA session I part 2 ☺ HW 3 (Due April 7th,2022)

In order to receive HW points from the following questions, students must submit your answer with STATA log file.

Class lecture examples:

- Table 6.4 Fertility and other data for 64 countries
- Table 7.4 Total cost and output
- Table 7.9 The demand for Chicken in the United States, 1960-1982
- Table 8.9 Savings and Personal Disposal Income (billions of dollars), United States, 1970-1995

1. The demand for roses. **Table 7.6** gives quarterly data on these variables:

Y = quantity of roses sold , dozens

X_2 = average wholesale price of roses, \$ / dozen

X_3 = average wholesale price of carnations, \$ / dozen

X_4 = average weekly family disposable income, \$ / week

X_5 = the trend Variable taking values of 1, 2, and so on,, for the period 1971 – III to 1975 – II in the Detroit Metropolitan area

You are asked to consider the following demand functions:

$$Y_t = \alpha_1 + \alpha_2 X_{2t} + \alpha_3 X_{3t} + \alpha_4 X_{4t} + \alpha_5 X_{5t} + u_t$$

$$\ln Y_t = \beta_1 + \beta_2 \ln X_{2t} + \beta_3 \ln X_{3t} + \beta_4 \ln X_{4t} + \beta_5 X_{5t} + u_t$$

- Estimate the parameters of the linear model and interpret the results.
- Estimate the parameters of the log-linear model and interpret the results.
- β_2 , β_3 , and β_4 give, respectively, the own-price, cross-price, and income elasticities of demand. What are their a priori signs? Do the results concur with the a priori expectations?

2. **Table 7.12** gives data for real consumption expenditure, real income, real wealth, and real interest rates for the U.S. for the years 1947-2000.
- Given the data in the table, estimate the linear consumption function using income, wealth, and interest rate. What is the fitted equation?
 - What do you estimated coefficients indicate about the variables' relationships to consumption expenditure?
3. **Table 7.11** gives data for the manufacturing sector of the Greek economy for the period 1961-1987
- See if the Cobb-Douglas production function fits the data given in the table and interpret the results. What general conclusion do you draw?
 - Now consider the following model:

$$\text{Output} / \text{labor} = A(K / L)^{\beta} e^{u}$$

where the regressand represents labor productivity and the regressor represents the capital labor ratio. What is the economic significance of such a relationship, if any? Estimate the parameters of this model and interpret your results.

Class activities (Due April 7th,2022)☺ ☺

1. **Table 8.8** The Cobb-Douglas Production Function for the Mexican Economy, 1955 – 1974

$$\ln GDP_t = \beta_1 + \beta_2 \ln Labor_t + \beta_3 \ln Capital_t \quad (1)$$

$$\ln \frac{GDP_t}{Labor_t} = \gamma_1 + \gamma_2 \ln \left(\frac{Capital_t}{Labor_t} \right) \quad (2)$$

Is the Mexican economy characterized by constant returns to scale over the sample period?