

Fall 2009: Econometrics I

Homework Assignment #6 (Due Wednesday, 11/11, in class)

1. The translog production function (similar to the one the class note) but without constant return to scale is:

$$\begin{aligned}\ln C = & \alpha + \beta_1 \ln p_1 + \beta_2 \ln p_2 + \beta_3 \ln p_3 + \beta_y \ln y \\ & + \delta_{11} \frac{1}{2} \ln^2 p_1 + \delta_{12} \ln p_1 \ln p_2 + \delta_{13} \ln p_1 \ln p_3 \\ & + \delta_{22} \frac{1}{2} \ln^2 p_2 + \delta_{23} \ln p_2 \ln p_3 + \delta_{33} \frac{1}{2} \ln^2 p_3 \\ & + \gamma_{y1} \ln Y \ln p_1 + \gamma_{y2} \ln Y \ln p_2 + \gamma_{y3} \ln Y \ln p_3\end{aligned}$$

- a. Derive the factor share equation.
 - b. The three factor shares must add identically to 1. What restrictions does this requirement place on the model parameters? Show that the adding-up condition can be imposed directly on the model.
2. page 206, #8.5
 3. page 207, #8.8
 4. page 240-241, #9.4
 5. page 241-242, #9.6