Chapter 15. Econometrics

1. In an attempt to explain changes in the level of income inequality across countries during the past few decades, a researcher estimates the following multivariate model:

\[
\frac{\% \text{INEQ}_i}{\% \text{INEQ}} = \alpha_0 + \alpha_1 \Delta \text{UNION}_i + \alpha_2 \Delta \text{SKILL}_i + \epsilon_i
\]  

(1)

where \(\% \text{INEQ}_i\) is the percentage change in some measure of inequality (e.g., the 90:10 ratio) in country \(i\) over the time period 1990 - 2010, \(\Delta \text{UNION}_i\) is the change in the fraction of the workforce that belongs to a union in country \(i\), and \(\Delta \text{SKILL}_i\) is the change in the proportion of the workforce with at least a college degree. The model is estimated on a sample of developed countries (e.g., U.S., U.K., Canada, Japan, and Australia). What are the expected signs of \(\alpha_1\) and \(\alpha_2\)?

2. The 25 observations displayed in Table 15.4 can be used to estimate the following Ratio of Earning (RAT) model:

\[
\text{RAT}_t = \alpha_0 + \alpha_1 t + \epsilon_t
\]  

(2)

where \(\text{RAT}_t\) is the 80:20 ratio in year \(t\). What is the interpretation of \(\alpha_0\) and \(\alpha_1\)?