Chapter 9. Econometrics

1. To obtain an empirical estimate of the average return to education, you collect data on the wages and schooling level of individuals. The data is used to estimate the econometric model:

\[ \omega_i = \alpha_0 + \alpha_1 EDUC_i + \epsilon_i \]

where \( \omega \) is the hourly wage rate and \( EDUC_i \) is years of schooling for individual \( i \). Give one reason why it is likely that the ‘true’ return to education is overstated by \( \alpha_1 \). Give one reason why it is likely that the ‘true’ return to education is understated by \( \alpha_1 \).

2. One possible method of testing between the human capital and signaling models of wage determination is to test for diploma effects. In other words, suppose you estimate the following model:

\[ \omega_i = \alpha_0 + \alpha_1 CREDITS_i + \alpha_2 DIPLOMA + \epsilon_i \]

where \( \omega \) is the hourly wage rate, \( CREDITS_i \) is the number of college credits obtained by individual \( i \), and \( DIPLOMA \) is a 0/1 dummy variable taking the value of one if individual \( i \) graduated from college and 0 if the individual \( i \) did not graduate from college. What does the human capital theory predict about the signs and statistical significance of \( \alpha_1 \) and \( \alpha_2 \)? What does signaling theory predict about the signs and statistical significance of \( \alpha_1 \) and \( \alpha_2 \)?