Chapter 9. Econometrics

1. $\alpha_1$ is likely to overstate the actual return to education due to ‘ability bias.’ This refers to the fact people differ in their innate ability and such differences may be correlated with people’s education levels (such that higher ability people obtain more education). Under such a case, our traditional estimate of $\alpha_1$ will be biased up. In other words, we will overstate the effect of an additional year of schooling since only some of the increase in the wage is due to the year of schooling itself (the remainder is due to the fact that better educated individuals have higher innate ability levels and this ability is valued by the labor market). $\alpha_1$ may understating the actual return to education to the extent that $w$ does not fully capture all the benefits of education. In particular, one should include all forms of compensation in $w$ (e.g., retirement benefits, insurance benefits, discounts on various goods, etc.). If these alternative forms of compensation are omitted and are positively correlated with education levels, then $\alpha_1$ will be biased down.

2. The human capital theory argues that better educated workers are paid more because they are more productive as a result of skills acquired while in school. As a result, $\alpha_1$ should be positive and each college course taken increases one’s productivity and, hence, wage. Holding constant the number of credits, actually getting a diploma does not alter one’s productivity. Thus, conditional on the number of credits one has completed in college, a diploma should have no impact on one’s wage $\Rightarrow \alpha_2 = 0$. According to the signaling model, no skills are acquired from college attendance; schooling only acts as a signal to firms of an individual’s ability (this ability existed prior to college, the only problem was that firms could not observe who was high ability and who was low ability). As a result, if the signal firms are looking for is a college diploma, then the number of credits one has is irrelevant if one does not possess a college degree since firms will still assume the individual is low ability. Thus, conditional on a diploma, credits are irrelevant $\Rightarrow \alpha_1 = 0$. However, holding credits constant, a diploma will increase wages because it acts as a signal $\Rightarrow \alpha_2 > 0$. 