

Economics of Education
 Assignment 1
 Due April 22

1. Debbie is about to choose a career path. She has narrowed her options to two alternatives. She can either become a marine biologist or a concert pianist. Debbie lives two periods. In the first, she gets an education. In the second, she works in the labor market. If Debbie becomes a marine biologist, she will spend \$15,000 on education in the first period and earn \$472,000 in the second period. If she becomes a concert pianist, she will spend \$40,000 on education in the first period and then earn \$500,000 in the second period.
 - (a) Suppose Debbie can lend and borrow money at a 5 percent annual rate. Which career will she pursue? What if she can lend and borrow money at a 15 percent rate of interest? Will she choose a different option? Why?
 - (b) Suppose musical conservatories raise their tuition so that it now costs Debbie \$60,000 to become a concert pianist. What career will Debbie pursue if the discount rate is 5 percent?

2. Suppose Carl's wage-schooling locus is given by

<u>Years of Schooling</u>	<u>Earnings</u>
9	\$18,500
10	\$20,350
11	\$22,000
12	\$23,100
13	\$23,900
14	\$24,000

Derive the marginal rate of return schedule. When will Carl quit school if his discount rate is 4 percent? What if the discount rate is 12 percent?

3. Answer the following questions using the data set assigned to you in class.

Helpful hints:

- Make sure the analysis toolpak and analysis toolpak –VBA are turned on. To do this, go through tools and then add-ins.
- Before running the regression, make sure the variables of interest are in adjacent columns.
- To run the regression, go to tools, data analysis, and choose regression.
- Variables:
 - w = the hourly wage rate
 - s = years of schooling
 - exp = years of work experience

- urban = 1 if the individual lives in an urban area and 0 otherwise
- married = 1 if the individual is currently married and 0 otherwise
- afqt = an IQ test given to all individuals in the data. The reported scores are percentiles – 1 being the lowest and 99 the highest percentile.

- (a) Write out the equation that you are going to estimate. Make sure you carefully define all variables.
- (b) What is the rate of return to education based on the model we derived in class, excluding the afqt variable? How do we interpret this estimate?
- (c) What is the rate of return to education based on the model we derived in class, including the afqt variable? Does this estimate differ from part (B)? If so, why do you think this is?