

Your name _____ Student ID# _____

1. Individuals vary in their innate ability, τ , social skills β , and other attributes which affect earnings function. Let us assume for simplicity, that each individual lives for two periods. In the first period he is young, he does not work, decides how many years of schooling s to have and goes to school. Here we are talking about schooling that the individual decides not his parents. In the second period he is adult, he goes to the labor market and earns wage earnings $w(s; \tau, \beta)$ in the competitive labor market according to his schooling level s and other characteristics represented in τ and β . We assume for simplicity that each level of schooling costs him c dollars for tuition and all other expenses. He has to borrow money at the interest rate r per period to finance his schooling.
- (a) What is the future net value of investment in s years of schooling?
 - (b) In the diagram show which curve represents benefits $w(s; \tau, \beta)$, which curve represents cost of borrowing funds, and which part represents future net value from s years of schooling.

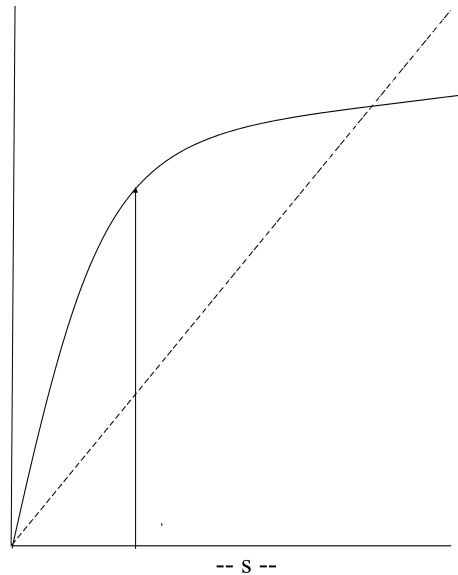


Figure 1: Optimal investment choice of schooling

- (c) Show in the diagram the optimal level of schooling that maximizes the net future value of earnings from schooling.
- (d) Which curve will shift which way and what will be the corresponding optimal schooling level for an individual with higher innate ability, τ as compared to the individual depicted in the figure.

- (e) Using Entwisle's arguments and your own arguments, explain how pre-school investment and the family background will affect the level of social skills acquisition of an individual.
- (f) Which curve will shift which way and what will be level of education of an individual who comes from a poorer family background.
- (g) How does family background affect r ? Because of this effect on r , which curve will shift which way for individual coming from a poorer family background? What will be the effect on optimal schooling level? Show in the diagram.
- (h) What are two different ways "equality of opportunities" may be hindered in our model? What kind of government policies will increase equality of opportunities in each case.