

Midterm Exam- Answer Sketch

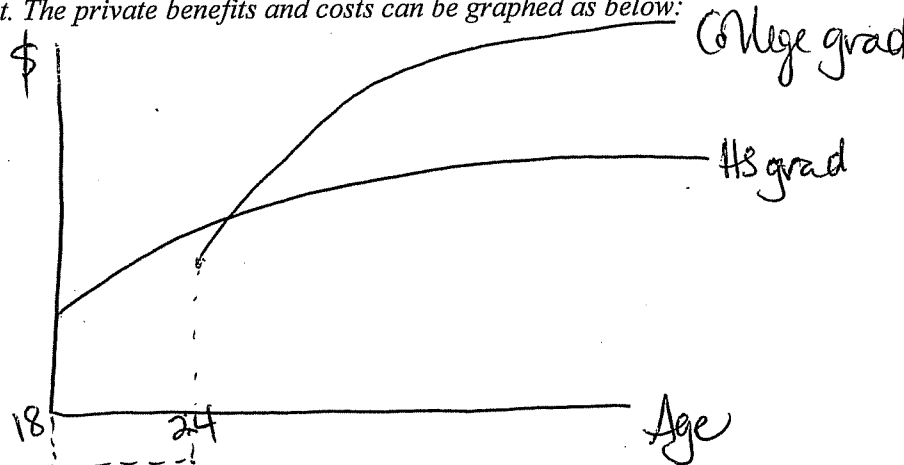
This exam is a take-home exam. It is open-book and open-note. You may not use sources beyond class notes, readings and our assigned books. You may talk with me or Aaron, but not with each other. This exam is due in my office (439 Engineering 2 Bldg.) no later than 6pm Thursday, Nov. 5. By the same time and date, an electronic version is due to economics180@gmail.com. You must turn in both versions.

Answer all questions.

1. Summarize the main features of the human capital model, including its main strengths and weaknesses. Explain the difference between private returns to education and public (or social) returns to education. Discuss the problem of "ability bias" in measuring the causal effect of education on earnings. How do studies of twins attempt to measure this bias? What have such studies found?

(20 points)

The human capital model is an investment model in which individuals weigh short term (or upfront) costs against the present value of long term benefits. Costs include out-of-pocket education expense (tuition and fees, books, supplies), foregone earnings, and psychic costs. Benefits include greater earnings potential, higher satisfaction on the job, and a greater appreciation for non-market goods. These returns are private returns, experienced by the individual making the human capital investment. The private benefits and costs can be graphed as below:



Public returns to higher education include the social benefits of a more educated populace, people who might vote more, engage in public and civic affairs, volunteer their time, commit fewer crimes. Society also benefits from a more productive workforce.

One strength of the model is the emphasis on investment with long-run returns. This is realistic, given that labor market earnings are the return, over time, from investing in oneself.

One key weakness is that the model implicitly assumes away all challenges in financing higher education, in that the focus is on costs, ignoring any borrowing or borrowing constraints. As we know from the real world, students and families face significant borrowing challenges.

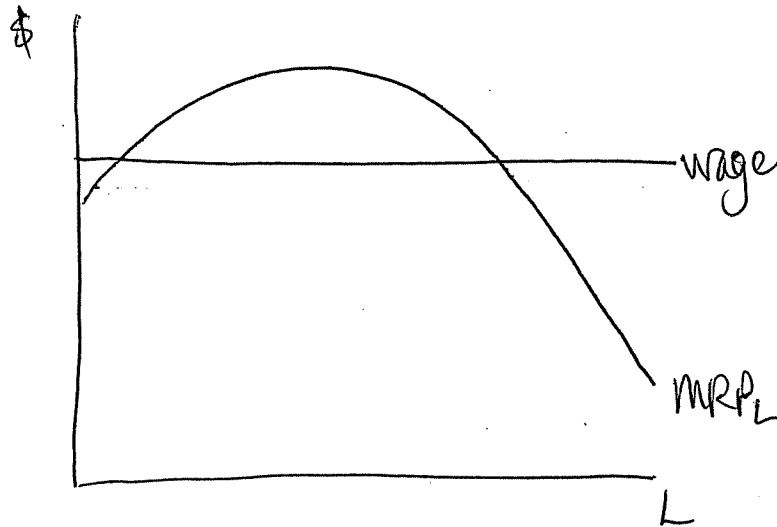
Ability bias. addresses the idea that those with more innate ability have a greater desire for more schooling. More innate ability also leads to more productivity on the job and higher earnings, holding education levels constant. There is upward bias in effect of education on earnings because studies do not distinguish between innate ability and the level of schooling. The extent of ability bias is difficult to determine; twin studies have produced some reliable estimates. There does seem to be ability bias in OLS estimates. Some consider the problem to be relatively small.

2. Women receive lower wages, on average, than men of equal age. What concepts of human capital help to explain this phenomenon? Explain. Why does the discrepancy between earnings of men and women grow with age? 25 pts

Women have traditionally exhibited interrupted labor market careers, which shortens the period of time over which educational and training investments can be recouped. The shorter work lives of women have, until recently, been a factor causing women to acquire less formal education, on average, than men. Thus, at the same age, women have had, on average, less human capital than men. This can account for some of their lower earnings. In addition, even at the same level of educational attainment, women have made different college major choices than men, and different occupational choices. Consider both college major and occupation to be human capital outcomes that can help explain earnings differences. If women traditionally exit the labor market to take care of family, at any given age women will have accumulated less labor market experience and this lesser experience is associated with lower earnings. This difference can grow with age. Also, if men anticipate longer work lives, they will invest more early on, which might depress early career earnings, with the returns to these investments occurring with age. This will cause female earnings to be relatively flat across age and men's earnings to increase more sharply with age, thus increasing the discrepancy between men and women as age increases.

3. In its proposals for both the Democratic and Republican parties to consider during the 1992 presidential election, one organization, commenting on the low wages paid by U.S. firms to workers in their Mexican plants, stated, "It is clear that current levels of compensation for these workers have no relationship with their productivity." Comment on the logic or assumptions of this statement. 15 points

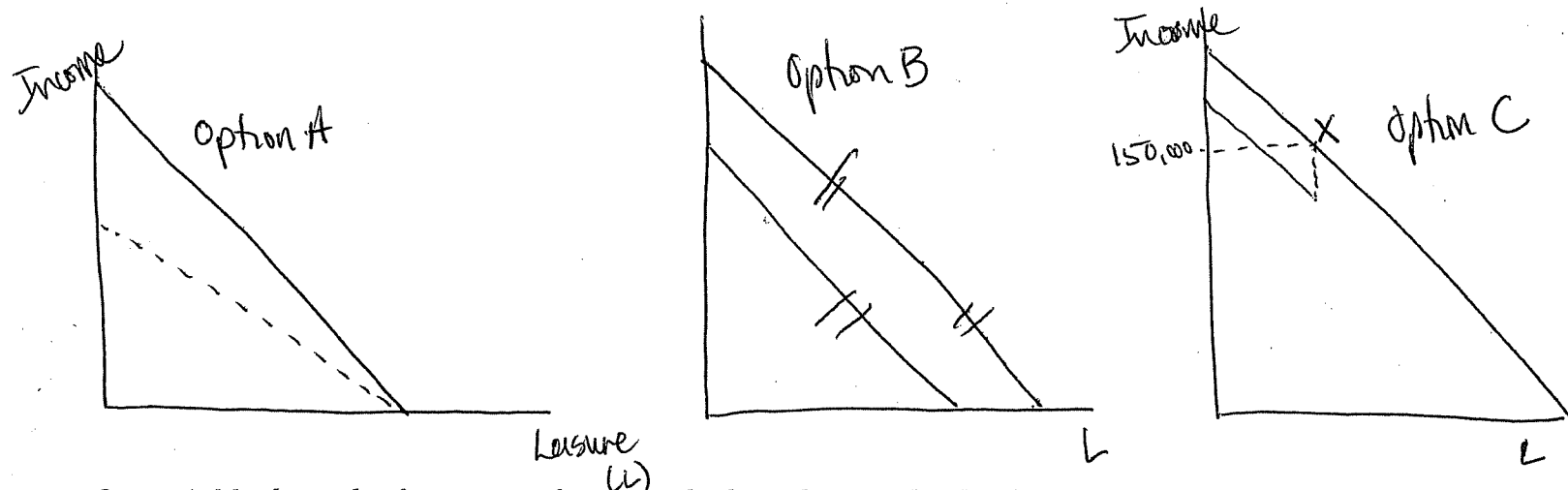
This statement assumes that the U.S. firms noted here are not profit maximizers. Profit maximizing employers hire workers up to the point where marginal revenue product (price (or MR) times MPP) equals the wage. Loosely speaking, this point, which helps us understand the demand for labor, means that there is a relationship, derived from profit-maximization between wages and productivity. If wages are low, a profit maximizer will hire labor in abundant quantity, driving marginal revenue product down to the low level of the wage. Low-wage workers are very likely low productivity workers. Here's a graph:



4. Suppose a government is considering several options to ensure that legal services are provided to the poor:

- Option A: All lawyers would be required to devote 5 percent of their work time to the poor, free of charge.
- Option B: Lawyers would be required to provide 100 hours of work, free of charge, to the poor.
- Option C: Lawyers who earn over \$150,000 in a given year would have to donate \$15,000 to a fund that the government would use to help the poor gain access to legal assistance.

25 points



Option A: Mandating that five percent of work time be devoted to providing legal services to the poor is a reduction in lawyers' wages. The reduction in the wage creates income and substitution effects, which work in opposite directions on labor supply. The income effect leads to more labor and the substitution effect leads to less labor.

Option B: Reduces the time lawyers have available for leisure and paid work. This shifts the budget constraint to the left (inward), in a parallel fashion, keeping the wage rate constant. This creates an income effect that increases the incentive to work for pay.

Option C: Leaves the budget constraint of lawyers who work relatively few hours unchanged, but for those who work enough to earn over \$150,000 there is an income effect that tends to increase work incentives. For lawyers with incomes only slightly greater than \$150,000, however, the \$15,000 "tax" may drive them to reduce hours of work, to reduce their earnings to \$150,000 in order to avoid the tax. These lawyers find their utility maximized at point X in the graph of option C's budget constraint.

5. True, false, or uncertain and explain.

"Certain occupations, such as coal mining, are inherently dangerous to workers' health and safety. Therefore, unambiguously, the most appropriate government policy is the establishment and enforcement of rigid safety and health standards."

15 points

False. Whether government policy is required in a particular labor market depends on how well that market is functioning. If the outcomes of the market take into account worker preferences (with full information and choice) and the preference of other parties affected by coal mine safety, then the labor market decisions will lead to utility maximization among workers. In this case, efforts by government to impose a level of safety greater than the market outcome could lead to a reduction in worker welfare. It is costly for employers to reduce injuries in environments that are "inherently dangerous." If a firm is to reduce injuries, it must invest resources, and it can remain competitive with other industries or firms only if it can sell its products at a price (which must at least cover costs) no higher than its competitors'. The increase in costs associated with increased safety must be offset either by cuts elsewhere (including cuts in labor costs) or by increases in product prices. In the latter case, the downward-sloping nature of product demand curves suggests a

reduction in employment. So, workers will feel the effects of the increased investment in safety on their wages and/or employment levels. Whether these costs imposed on workers are outweighed by the benefits of greater safety is the central social question.

If the market is functioning perfectly, then the costs and benefits of greater safety will have been weighed appropriately by private decision makers. If, however, the private decision makers do not weigh all the costs and benefits of greater safety, there is a very good chance that the market outcome will not be socially optimal. In this case, an appropriate setting of governmental standards could improve the utility of workers.