

I. alternative theories

A. Selection Models

Alternative theories can be seen as critiques of the human capital models, from either empirical or theoretical bases. Selection models arise from the insight that people differ, and they exploit their comparative advantage when choosing to take more schooling just as they did when they choose whether to work in a job with more pollutants. In the previous section, people choose to work in the dirty job because their tastes for cleanliness in the workplace was lower than average. Part of the compensating wage was, for all but the marginal worker, a rent. Now if in the spirit of the human capital earnings function, we assumed that all workers had the same tastes for cleanliness (in the human capital model, this would be saying that all workers were equally able in all jobs) then the compensating wage would be that unique wage that just makes everyone indifferent between working in the clean job and working in the dirty job. There would be no rents, and the compensating wage would be the correct one for everyone.

In a similar vain, when individuals differ then the estimated rate of return in the human capital earnings function no longer has a "structural" interpretation as the unique rate of return to everyone for their schooling. We discussed some of these models in the last lecture (Rosen, Roy and Lindsay).

B. Education as a Signal (to employers, the basic model is due to Spence, QJE, Aug 1973)

The Basic Signaling Set-up

	marginal product	proportion	Case 1-Costs	Case 2-Costs
Group I-B	1	.5	0	E
Group II-A	2	.5	0	.5*E

CASE 1-no costs to acquiring education

Even though productivity differs, everyone looks alike to the employer (observable differences are uncorrelated with productivity), so the expected marginal product is the same for all people because of the absence of signals that differentiate the workers:

$$E(MP) = .5*1 + .5*2 = 1.5$$

Group I is benefited in the sense that they are getting paid more than their marginal product; Group II is hurt. If better information were available then the employer would make use of it because of competition.

CASE 2-costs to acquiring education

A crucial assumption here is that education is not allocating workers to more productive employment; workers' marginal productivity is assumed to remain constant regardless of the tasks that they are assigned. More on this latter.

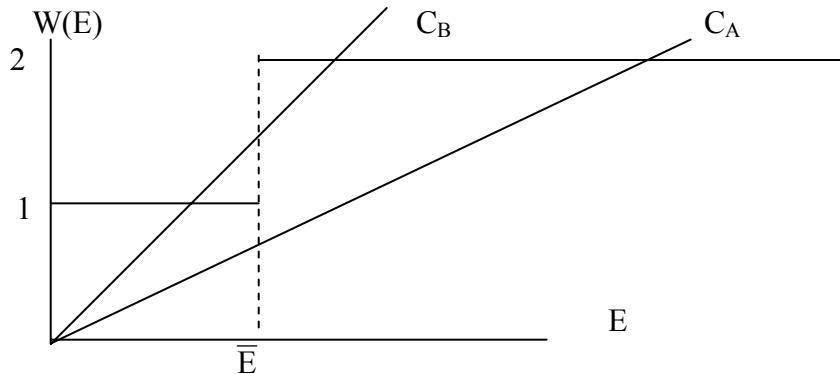
Assume E is a composite index of observable aspects of education: number of years and performance in school. Also assume that there is a negative correlation between productivity on the job and the costs of educational attainment—so high productivity types get more years of schooling.

Employers develop a conditional expectation of workers productivity given workers' educational attainment: $W(E)$, a wage schedule that is a function of education, E . Workers maximize their net payoff: $W(E)$ less the costs of obtaining education.

After several recontractings (where the employers conditional probabilities change in response to realized productivity), the market settles into a signaling equilibrium:

employer believes if $E \geq \bar{E}$ then is an A person with $MP=2$ and
 if $E < \bar{E}$ then it is a B person with $MP=1$.

So the signaling equilibrium would generate a conditional wage function that looked something like the following:



Given the offered wage schedule, members of each group will select their optimal levels for education.

For A, set $E \geq \bar{E}$ so it is optimal for $E = \bar{E}$.

Given As cost function, the A-worker will obtain the signal when the net benefit from doing so is greater than the benefit from not having the signal:

(wages from A – costs of signaling an A) > (wages from B)

$$2 - \bar{E}/2 > 1 \quad ; \quad \text{so that } \bar{E} < 2$$

For B, set $E=0$.

It doesn't pay to get any education if you are not going to use it as a signal (since education is costly), so your outcome must be one in which the net benefit from being labeled a B-type worker is greater than the benefit from obtaining the education signal and getting paid as a A-type worker;

$$(wages\ from\ being\ a\ B) > (wages\ from\ A - costs\ of\ signaling\ an\ A)$$
$$1 > 2 - \bar{E} \quad ;\ so\ that\ \bar{E} > 1$$

Employer beliefs about the signal will be confirmed when $1 < \bar{E} < 2$.

Characteristics of this simple signaling model:

1. there are an infinite number of equilibrium levels of signals: $\bar{E} \mid 1 < \bar{E} < 2$
2. as the equilibrium \bar{E} increases, A-type workers hurt (since their costs increase, but their benefits from obtaining the signal doesn't change). B-type workers are unaffected.
3. Everyone is worst off now than they were in the absence of signaling. Before, everyone got paid the expected marginal product (of 1.5), without having to worry about any signaling costs. But now
 - B-type workers only get 1 (instead of 1.5)
 - A-type workers get $2 - \bar{E}/2$; but since $\bar{E} > 1$, A-type workers net pay is less than 1.5

Note that schooling isn't increasing the workers productivity at all (that is fixed, and unaffected by the schooling), so the social returns from the schooling is zero. But the private returns are positive (given the signaling equilibrium), so that A-type workers will go ahead and signal. But the socially optimal level of education is $\bar{E}=0$. There is no allocative efficiencies in this simple model because identifying an A or B-type worker doesn't affect their productivity.

II. Wage Structure (chapter 8 in Borjas): prior discussions centered on what determines the level of pay, this chapter examines the dispersion of pay (broadly defined).

A. Gini coefficient

Evidence for population

Evidence for those who gamble: gambling as regressive taxation

B. Figure 8.7 and the wage gap

Impact of the internet

C. Superstars

Figure 8.5