

Human Resources

Homework 4

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Answer following questions on separate sheets of A4 papers. Answer should be in English. You may discuss questions with your friends, but you have to submit your own answer. Just copying your friends' answer will be harshly punished. **The due date is 2/17/2005.** You must submit your answer in the class.

1. Borjas, 3rd edition, p. 232, Problem 4 (5pts)

Suppose all workers have the same preferences represented by

$$U = \sqrt{w} - 2x$$

where w is the wage and x is the proportion of the firm's air that is composed of toxic pollutants. There are only two types of jobs in the economy, a clean job ($x=0$) and a dirty job ($x=1$). Let w_0 be the wage paid by the clean job and w_1 be the wage paid by the polluted job. If the clean job pays \$16 per hour, what is the wage in dirty jobs? What is the compensating wage differential?

2. Borjas, 3rd edition, p. 232, Problem 5 (5pts)

Suppose a drop in the compensating wage differential between risky jobs and safe jobs has been observed. Two explanations have been put forward: First, engineering advances have made it less costly to create a safe working environment; second, the phenomenal success of a new reality show *Die on the Job!* has imbued millions of viewers with a romantic perception of work-related risks. Using supply and demand diagrams, support each of the two explanations for the drop in the compensating wage differential. Can information on the number of workers employed in the risky occupation help determine which explanation is the right one?