

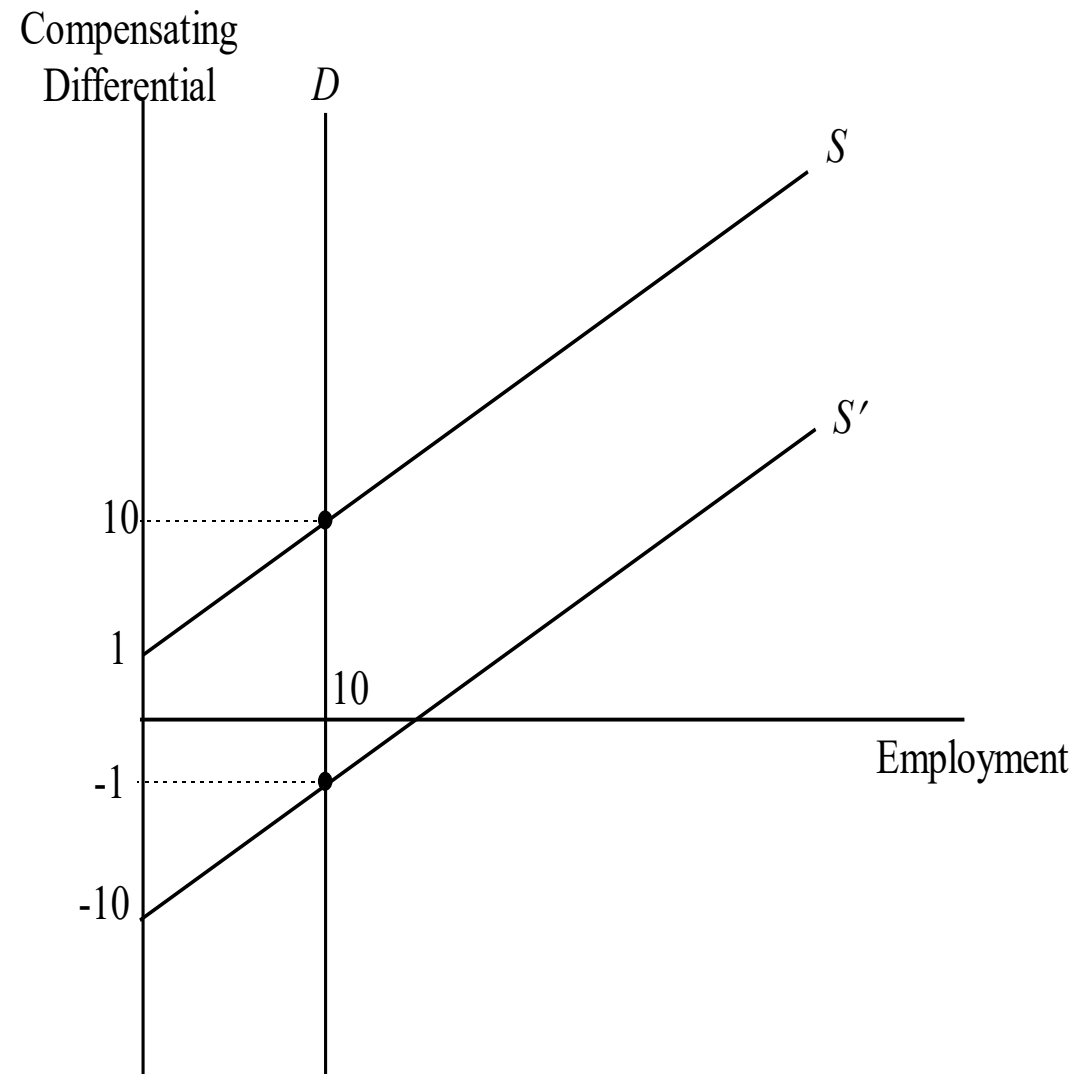
EE 471  
Class activity II

1. Suppose there are 100 workers in the economy in which all workers must choose to work a risky or a safe job. Worker 1's reservation price for accepting the risky job is \$1; worker 2's reservation price is \$2, and so on. Because of technological reasons, there are only 10 risky jobs.
  - a) What is the equilibrium wage differential between safe and risky jobs? Which workers will be employed at the risky firm?

The supply curve to the risky job is given by the fact that worker 1 has a reservation price of \$1, worker 2 has a reservation price of \$2, and so on.

The demand curve (D) for risky jobs is perfectly inelastic at 10 jobs.

Market equilibrium is attained where supply equals demand so that 10 workers are employed in risky jobs; the market compensating wage differential is \$10 since this is what it takes to entice the marginal (tenth) worker to accept a job offer from a risky firm.



b) Suppose now that an advertising campaign, paid for by the employers who offer risky jobs, stresses the excitement associated with “the thrill of injury,” and this campaign changes the attitudes of the work force toward being employed in a risky job. Worker 1 now has a reservation price of  $-\$10$  (that is, she is willing to pay  $\$10$  for the right to work in the risky job); worker 2’s reservation price is  $-\$9$ , and so on. There are still only 10 risky jobs. **What is the new equilibrium wage differential?**

If tastes towards risk change, the supply curve shifts down to  $S'$  and the market equilibrium is attained when the compensating wage differential is  $-\$1$ .

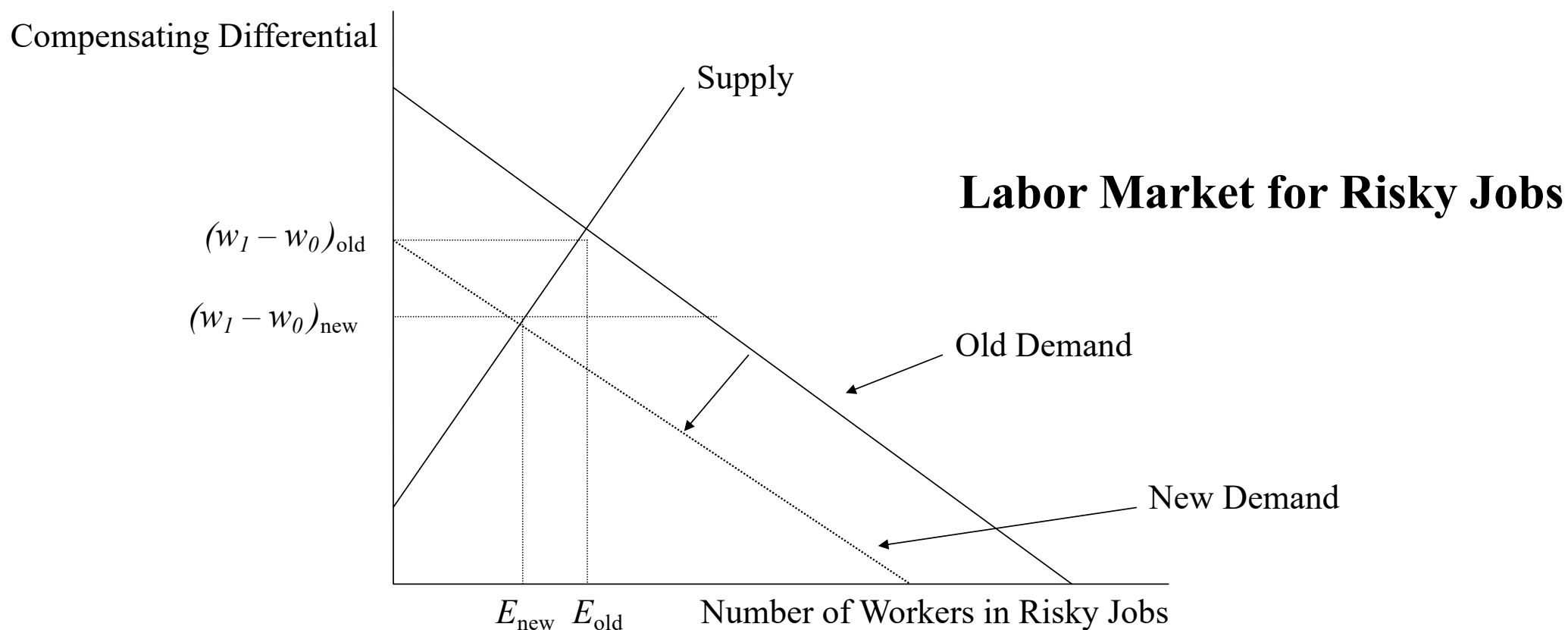
This is the compensating differential required to hire the marginal worker (that is, the 10th worker).

Note that this compensating differential implies that even though most workers (from worker 12 onwards) dislike risk, the market determines that risky jobs will pay less than safe jobs.

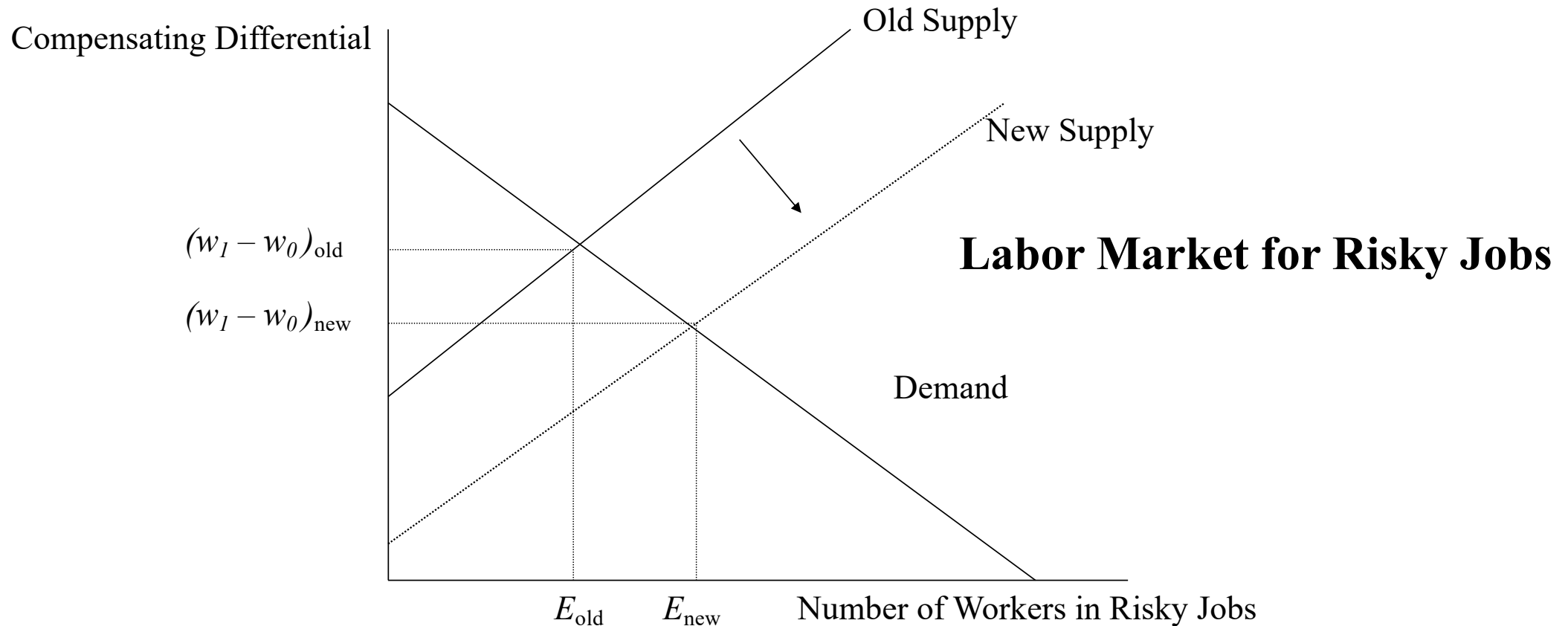
2. Suppose a drop in the compensating wage differential between risky jobs and safe jobs has been observed. Two explanations have been put forward:
- Engineering advances have made it less costly to create a safe working environment.
  - The phenomenal success of a new action serial “Die On The Job!” has imbued millions of viewers with a romantic perception of work-related risks.

Using supply and demand diagrams show how each of the two developments can explain the drop in the compensating wage differential. Can information on the number of workers employed in the risky occupation help determine which explanation is more plausible?

The engineering advances make it cheaper for firms to offer safe jobs, and hence reduce the gain from switching from a safe environment to a risky one (or reduce the cost of switching from a risky environment to a safe one). This will decrease (shift in) the demand curve for risky jobs and reduce the compensating wage differential. Note that the equilibrium number of workers in risky jobs goes down.



The glamorization of job-related risks may make people more willing to take these risks. This increases the supply (shift out) of workers to risky jobs and reduces the compensating differential. Note that the equilibrium number of workers in risky jobs goes up.



Thus, information on whether employment in the risky sector increased or decreased can help discern between the two competing explanations: if employment in risky jobs went down then it is likely due to technology; if employment in risky jobs went up it is likely due to preferences.