Compensating Differentials

Are higher wages paid to individuals in dirty, cold, repetitive, or risky jobs?

Are lower wages paid to individuals in safe, comfortable, or interesting jobs?

How can we use this sort of wage differential for public policy?

Does this sort of wage differential explain any of the gender pay gap?
Definition – a compensating differential is a premium that is paid for working a job with bad characteristics

Some examples

Risk of death or injury
Physical work
Repetitive
Lacks freedom
Stressful
Income insecurity
Dirty

Assumptions

two workers are equally productive
jobs differ in their dirtiness
workers know the dirtyness and can switch between jobs
workers maximise utility over
   C – consumer goods
   D – dirtiness of a job
Firms can choose the value of
   $\Delta W$ – wage premium in the dirty job
   B – expenditure on cleaning up
Diagram of worker’s indifference curve

A has a high disutility of from dirtiness
B has a lower disutility

Suppose D is binary 0 = clean, 1 = dirty
Let Z denote the amount of consumer goods that a worker would forgo to have a clean job

If $Z < \Delta W$ then the worker goes to the dirty job
If $Z > \Delta W$ the worker goes to the clean job
At $Z = \Delta W$ the worker is indifferent

Diagram of $f(Z)$
Diagram of the firm’s isopoint curve

Firm X has a high cost of clean-up
Firm Y has a low cost of clean-up

If $B > \Delta W$ then the firm will use the dirty technology
If $B < \Delta W$ the firm will use the clean technology
If $B = \Delta W$ then the firm will be indifferent

Diagram of $f(B)$
Matching of workers to firms – In equilibrium firms with high clean-up costs will hire workers with low disutility from dirtiness and firms with low clean-up costs will hire workers with high disutility

Diagram of matching

$\Delta W$ is the market price of dirtiness
Policy implications

1. Should the government impose a clean workplace law if there is perfect information?

No – workers in dirty environments are being compensated. Since $\Delta W > Z$ for workers in a dirty workplace. Workers will be made worse off if $\Delta W = 0$ and $D = 0$.

2. If workers do not have good information about dirtiness should government impose a clean workplace law?

Maybe – if large numbers are mis-matched because of information problems. The same logic applies if there are high mobility costs.

3. How should workplace injuries/fatalities be compensated?

Note: Can’t determine the value by asking people how much they would accept to be killed

Use $\Delta W$ as an indicator. Ex: if $\Delta W$ for a .1 percent risk of fatality is £2000 then compensation should be £2000*1000 or £2,000,000
Problem $\Delta W$ is the market price. This come from the marginal value of $Z$, not a given individual. May give too low a value for compensation.

4. Why do women earn less than men?

Stylised fact – women earn 74p on the pound
Studies show about half is due to difference in characteristics
Thus 13p on the pound is unexplained.

Compensating wage differentials as an explanation
Division of labour in the household – husband, primary earner; woman, primary child minder
Implies women have higher $Z$ – choose less dangerous jobs

Evidence $\Delta W$ explains about 1/3 of the “unexplained” gap