Optimal Search and Unemployment Benefits

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1 Optimal Search and Unemployment Benefits

1.1 Basic assumptions

Agents are risk averse and live two periods. They do not save or borrow, they simply consume what they receive in each period.

1.1.1 First Period

In the first period: they work and get a wage w and they pay a flat rate tax τ that is used to finance the unemployment benfit b that will be paid to individuals that will lose the job. At the end of the first period they lose the job with probability p (and keep it with probability $1-p$).

1.1.2 Second Period

In the second period: if they had mantained the job they earn w. If they had lost the job they can search for a new one with a search effort equal to s (with $0 \leq s \leq 1$). The probability of finding a job is directly s. If they find a job they get w otherwise they receinve the benefit b. The wage in the second period is not affected by τ.

Searching entails some costs that depends on the effort s in the search. We define this costs as $\phi(s)$ with $\phi'(s) > 0$, $\phi''(s) > 0$.

1.1.3 Period Utility

The utility of workers in each period depends on consumption c and is given by $V(c)$with $V'() > 0$ and $V''() < 0$.

1.1.4 Expected Lifetime Utility

We assume that discount rate is zero and then, given all the above, the expected lifetime utility W is

$$W = V(w-\tau) + (1-p)V(w-\tau) + p(1-s)V(b) + psV(w\tau) - p\phi(s)$$

1.2 Behaviour of workers

Suppose a worker lose the job. In this event he will choose how much to search to maximise its expected utility from that point onwards. If he loses the job its expected utility is

$sV(w-\tau)+(1-s)\,V(b)-p\phi(s)$

and thus he choose d to maximise the above

$\max_s sV(w-\tau)+(1-s)\,V(b)-p\phi(s)$

therefore

$V(w-\tau)-V(b)+\phi'(s)=0$

$$\phi'(s)=V(w-\tau)-V(b)$$

The above implicitily determines s. In particular, whenever b rises, $\phi'(s)$ goes down, and s MUST goes down (in fact $\phi''(s)>0$). Higher benefits reduces serach efforts and increases unemployment duration. In practice, $s=s(b)$ with $s'(b)<0$.