Job search and unemployment insurance: An Example

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(based on T. J. Sargent (1987))

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A person can receive 3 offers
$15,000 with probability 3/10
$20,000 with probability 6/10
$40,000 with probability 1/10
Discount rate is $\beta = .95$

The value of a lifetime offer of $15,000 per year is

$$\frac{15000}{(1 - 0.95)} = 3.0 \times 10^5$$

$$(1)$$

$$v(20000) = \frac{20000}{(1 - 0.95)} = 4.0 \times 10^5;$$

$$(2)$$

$$v(40000) = \frac{40000}{(1 - 0.95)} = 8.0 \times 10^5$$

$$(3)$$

Expected value of the offers:

$$E(w) = 10^5 \left( 3 \times \frac{3}{10} + 4 \times \frac{6}{10} + 8 \times \frac{1}{10} \right) = 410\,000$$

$$(4)$$

Discounted value of it is

$$\beta E(w) = .95 \times 410\,000 = 389,500$$

$$(5)$$

Assume $b = 10,000$. 

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Then the value of staying unemployed is

\[ b + \beta E(w) = 399,500 \]  \hspace{1cm} (6)

This is bigger than the value of receiving the lowest offer, with the value \( v(15,000) = 3.0 \times 10^5 \). Rejected.

It is still below the second highest offer, \( v(20000) = 4.0 \times 10^5 \), which will be accepted.

Clearly, the highest offer will be accepted as well.

Note that the unemployment benefit, 10,000, is below the lowest acceptable wage, 20,000.

If the unemployment benefit rises to 11,000, then the second highest offer is rejected. The only offer that the individual accepts is 40,000.