

Key for 2nd Quiz: ~~Spring~~ Fall 2012

#1. The first step in constructing a rigorous answer to this question should be derivation or demonstration of the optimal condition for intertemporal allocation of work effort. Fundamental principles tell us that the optimal combination of l_1 and l_2 is the combination @ which $MB = MC$. To identify MC and MB , suppose a hh is considering $\uparrow l_1$ and $\downarrow l_2$ (note that is equivalent to shifting leisure from $pd 1$ to $pd 2$). Assuming that the Δ in $l_1 = 1$, this will reduce period 1 utility by $-MU_{l_1}$. This is the marginal utility loss or the MC in terms of utility.

⇒ In order to $\uparrow$ leisure in $pd 2$ (i.e. $\downarrow l_2$) the hh will have to transfer the resources it gained in $pd 1$ from the 1 unit increase in l_1 to period 2. It will use bonds that pay interest @ rate R as the vehicle for transferring these resources into the future. This will allow the hh to buy $\frac{MPL_1(1+R)}{MPL_2}$ additional units of leisure in $pd 2$. Note that $MPL_1(1+R)$ is the ~~same~~ additional resources available to buy add'l $pd 2$ leisure and that MPL_2 is the opp cost of $pd 2$ leisure and therefore the best estimate of the price of leisure in $pd 2$.

#1 cont'd

The effect on utility in pd 2 will be given by

$$\left[\begin{array}{l} \text{Appropriately} \\ \text{discounted} \\ \text{marginal utility} \\ \text{assoc with work} \\ \text{in pd 2} \end{array} \right] \times \left[\begin{array}{l} \text{\# of additional} \\ \text{units of leisure} \end{array} \right]$$

$$= \frac{1}{1+p} MU_{l_2} \left[\frac{MPL_1(1+R)}{MPL_2} \right]$$

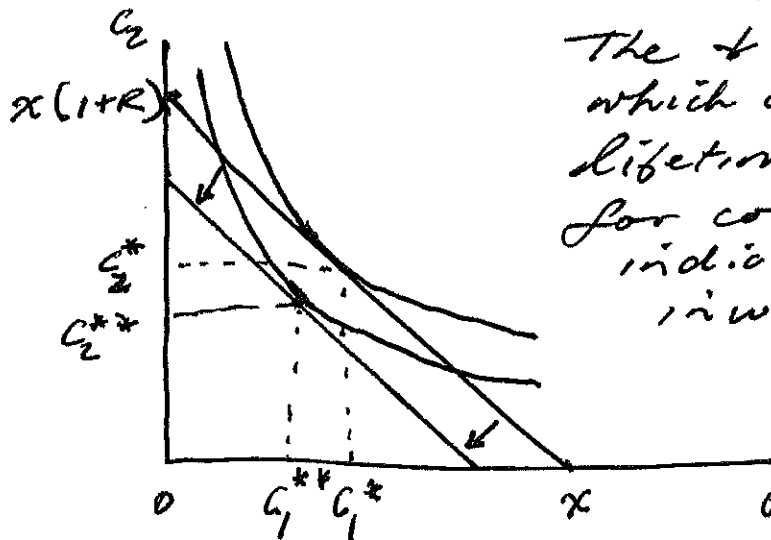
This is the marginal utility gain or the MB in terms of utility. To derive the optimal condition set $MB = MC$ to yield.

$$-MU_{l_1} = \frac{1}{1+p} MU_{l_2} \left[\frac{MPL_1(1+R)}{MPL_2} \right]$$

Consequently, if the hh attempts to shift leisure into the future that will fail to ↑ utility since MB is already equal to MC. In other words the net effect ~~on~~ on util in pd 1 will be exactly offset by the positive effect on utility in pd 2. The statement is: False.

2. A severe financial crisis which led to massive wealth destruction was an integral component of the recent recession in the United States. Assume that a similar recession occurs in 317land. Use whatever combination of graphical and written exposition you deem appropriate to evaluate the implications of the destruction of wealth for retail sales and the rate of unemployment in 317land. Please note that a complete answer should be thoroughly supported by clear and precise theoretical reasoning.) (15 points)

Initially the representative hh is consuming the combination (c_1^*, c_2^*) in the diagram.



The ↓ in wealth reduces x which is the real p.v. of lifetime resources available for cons. Since no Δ in R is indicated the IBC shifts inwards but the shift is parallel. This inward shift in the IBC means that some combinations of c_1 and c_2 that were

feasible before the ↓ in wealth are no longer possible. The hh ends up consuming the combination (c_1^{**}, c_2^{**}) so that cons of goods in $pd\ 1$ and $in\ pd\ 2$ decline. This implies a reduction in demand for retail goods and a decline in retail sales. Holding all else constant, the decline in retail sales will lead firms to reduce production (due to rising inventory levels) and cut back on employment. This of course implies upward pressure on the rate of unemployment.

2. Cont'd.

In addition to the foregoing, not that the decline in wealth will also lead hhs to reduce leisure in both pds 1 and 2 so that work-effort ~~for labor~~ or workers willingness to work or supply labor $\uparrow$. Therefore as firms faced with declining demand for their products reduce hiring, workers want to work more. For example some workers postpone retirement. This increase in labor supply @ the same time that demand for labor by firms is falling exerts even greater upward pressure on the rate of unemployment.