

Chapter 6 : A Real Intertemporal Model with Investment (Supplement 1)

EE312

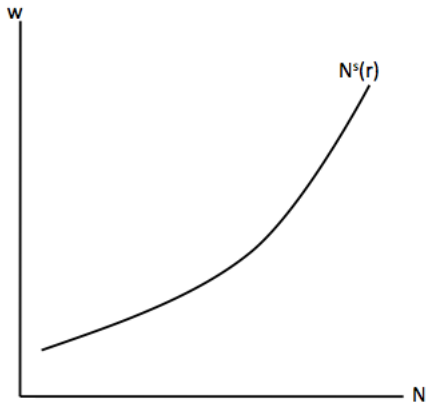
Macroeconomics, Stephen Williamson, Chapter 11

2014

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- 1 **current budget constraint** : $C + S^P = \dots\dots\dots$. **future budget constraint** : $C' = w'(h - \ell') + \pi' - T' + (1 + r)S^P$
- 2 **life-time budget constraint** :

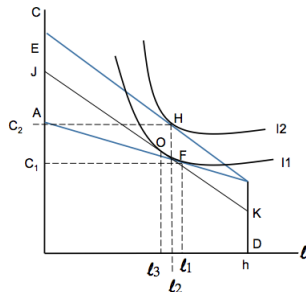
$$C + \frac{C'}{1 + r} = \dots\dots\dots + \frac{w'(h - \ell') + \pi' - T'}{1 + r}$$
- 3 **current period optimal condition** : $MRS_{\ell, C} = w$. **future period optimal condition** : $MRS_{\ell', C'} = w'$. **intertemporal optimal condition** : $MRS_{C, C'} = 1 + r$



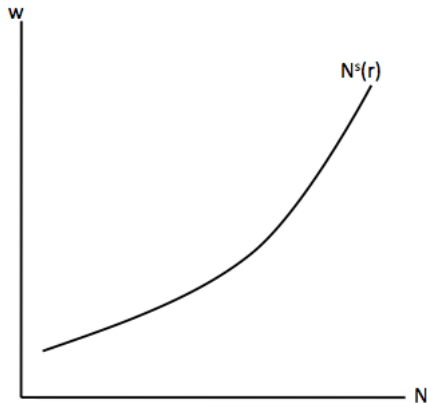
$w \uparrow$

income effect = $C \dots$
 substitution effect = $C \dots$

income effect = $l \dots$
 substitution effect = $l \dots$

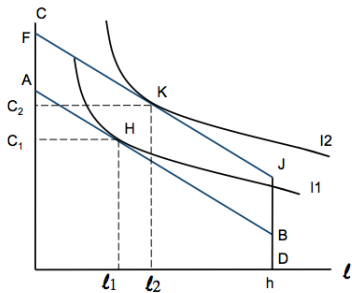
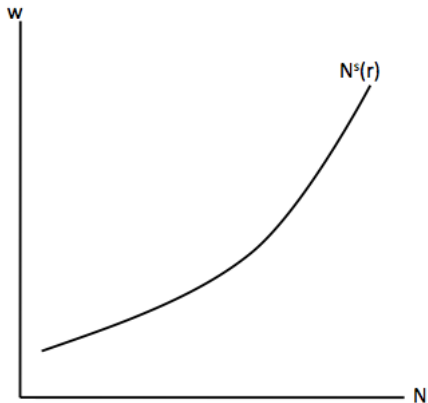


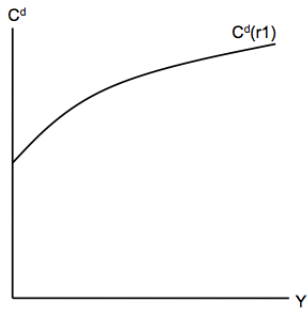
- an increase in real interest rate: $SE > IE$



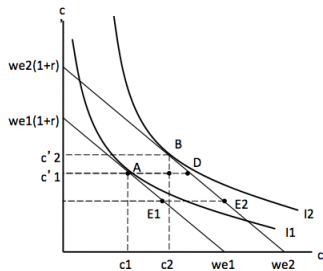
- IE: $r \uparrow$ income from saving $\uparrow \ell \uparrow$
- SE: $r \uparrow$, current leisure is more expensive, $\ell \downarrow$

- an increase in life time wealth $(\pi - T) \uparrow$

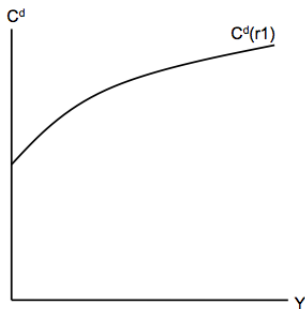




Ch5: $y \uparrow$

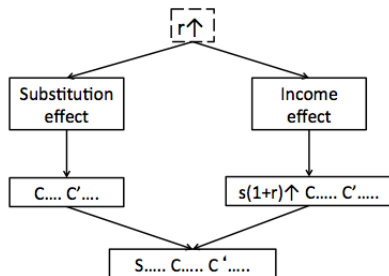


An increase in r

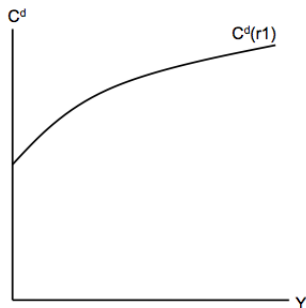


Ch5: $r \uparrow$, stronger SE $\Rightarrow c \downarrow$,
lender

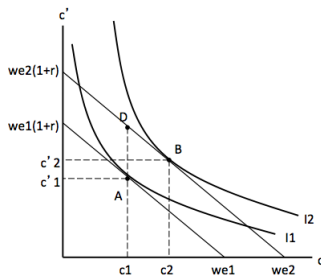
The consumer is a lender

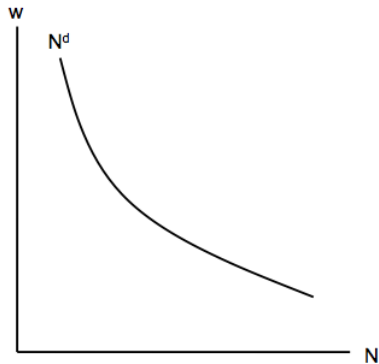


an increase in life time wealth ($y' \uparrow$ or $\left(t + \frac{t'}{1+r}\right) \downarrow$)

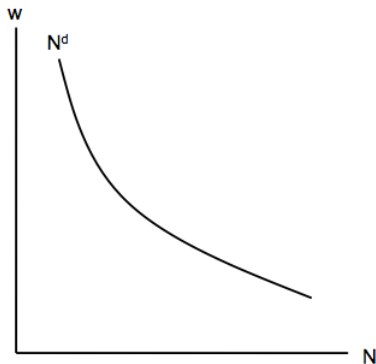


Chapter 5 : $y' \uparrow$





an increase in z or K



- Optimal Investment Decision :

$$\dots\dots\dots = 1.$$

- $MP'_K - d = r.$
- effect of an increase in z' or K

