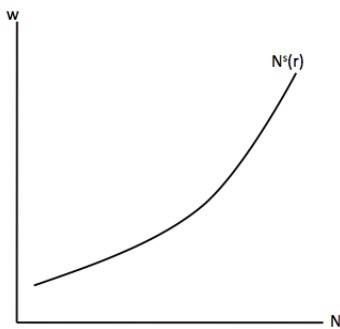


EE312 Macroeconomics, 2/2013 (Sec. 046402)
Chapter 6. A Real Intertemporal Model with Investment (Part 1)

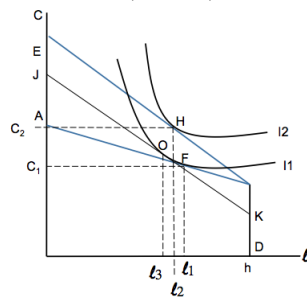
1 Representative Consumer

1. **current budget constraint** : $C + S^P = \dots$. **future budget constraint** : $C' = w'(h - \ell') + \pi' - T' + (1+r)S^P$
2. **life-time budget constraint** : $C + \frac{C'}{1+r} = \dots + \frac{w'(h - \ell') + \pi' - T'}{1+r}$
3. **current period optimal condition** : $MRS_{\ell,C} = w$. **future period optimal condition** : $MRS_{\ell',C'} = w'$. **intertemporal optimal condition** : $MRS_{C,C'} = 1+r$
4. **current labour supply** : Current labor supply increases with the real wage, given r (assuming the dominant substitution effect).

labour supply curve



Chapter 3 (Part 1) : Stronger SE



$w \uparrow$

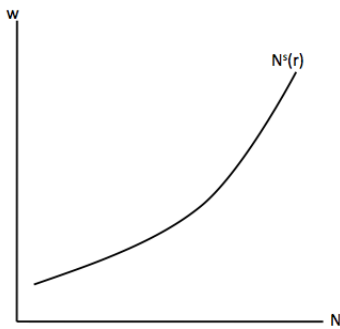
 ↗ income effect = C.....

 substitution effect = C.....

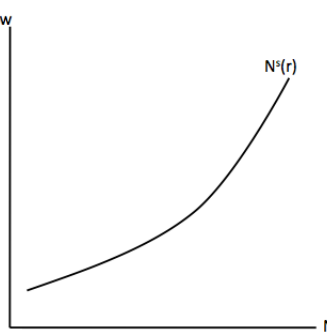
 ↘ income effect = l.....

 substitution effect = l.....

an increase in real interest rate: SE > IE

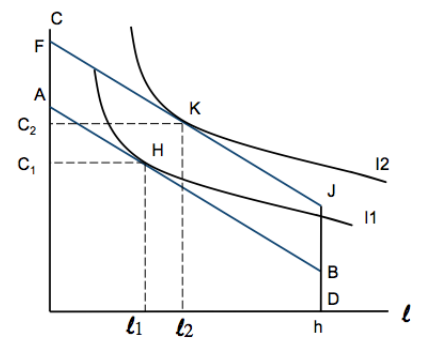


an increase in life time wealth



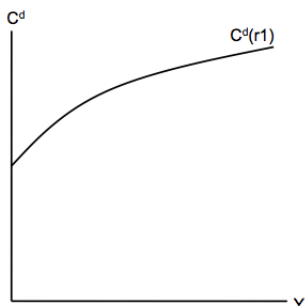
- IE: $r \uparrow$ income from saving $\uparrow \ell \uparrow$
- SE: $r \uparrow$, current leisure is more expensive, $\ell \downarrow$

Chapter 3 (Part 1) : $(\pi - T) \uparrow$

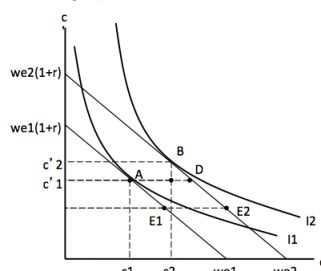


5. Demand for current consumption goods

An increase in r

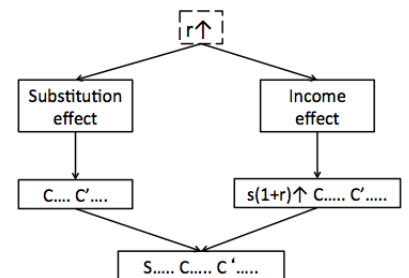


Ch5: $y \uparrow$

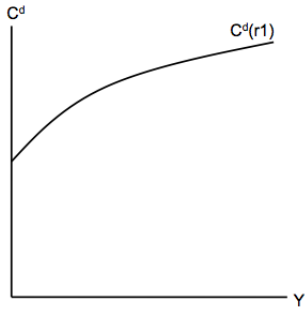


Ch5: $r \uparrow$, stronger SE $\Rightarrow c \downarrow$, lender

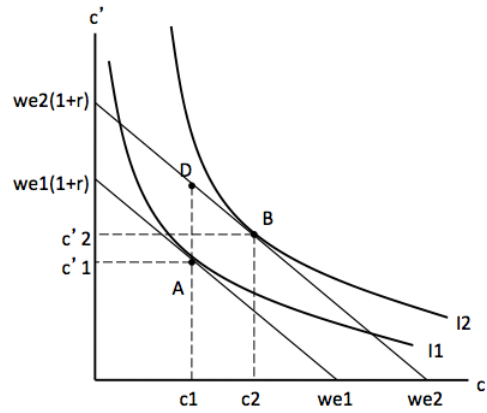
The consumer is a lender



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

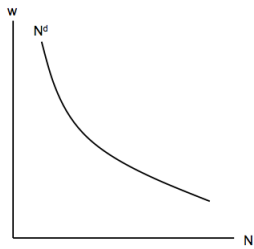


Chapter 5 : $y' \uparrow$

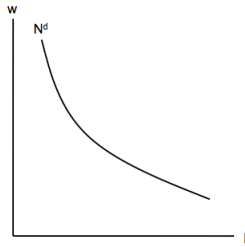


2 Representative firm

1. current production function : $Y = zF(K, N)$. future production function : $Y' = z'F(K', N')$
2. change in capital stock : $K' = (1 - d)K + I$
3. firm's current profit : $\pi = Y - wN - I$. firm's future profit : $\pi' = Y' - w'N' + (1 - d)K'$
4. firm's present value of profit : $V = \pi + \frac{\pi'}{1+r}$.
5. current labour demand

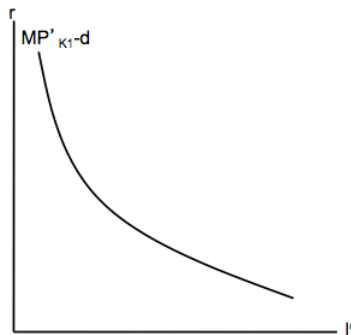


an increase in z or K



6. Investment Decision

- Optimal Investment Decision :
..... = 1.
- $MP'_K - d = r$.
- effect of an increase in z' or K



3 Government Sector

- $G + \frac{G'}{1+r} = T + \frac{T'}{1+r}$.