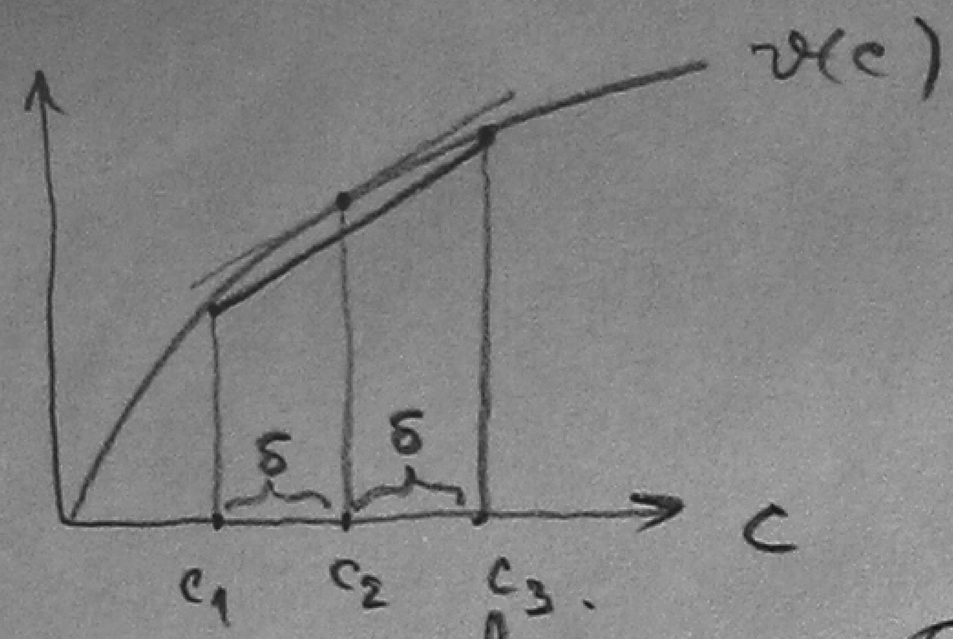


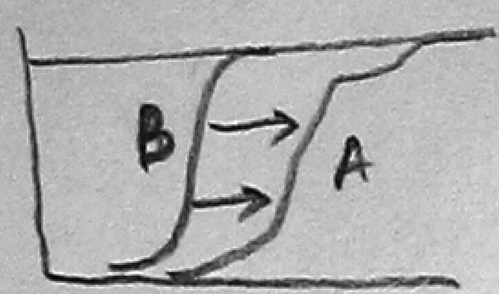
① $U(A) > U(B)$
$\Rightarrow$ if ↙
$<$ if ◺

$(EA > EB)$

② $EA = EB \Leftrightarrow \pi_3 - \pi_1 = \pi_3 - \pi_1$
given that.

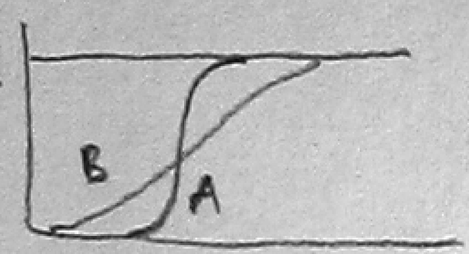
③ $U(A) > U(B)$ if v concave
$<$ convex

FOSD:

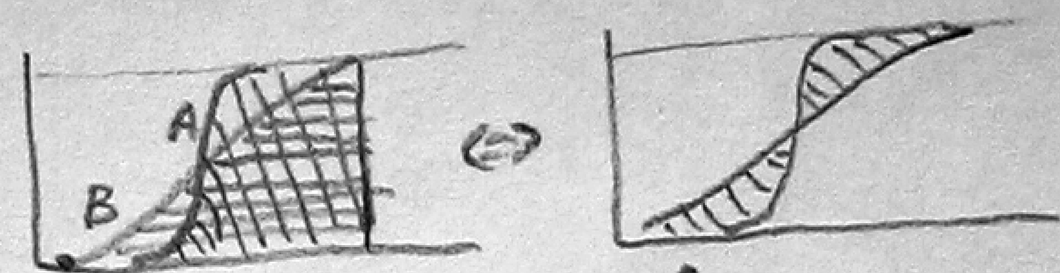


① ↙ $\Rightarrow U(A) > U(B)$
◺ $\Rightarrow$ $<$

SOSD:



$U(B) < U(A)$ if concave
$>$ convex

② 

$\Leftrightarrow EA = EB$.
B mean preserving spread of A.

$y_1, \tilde{y}_2, r$ $\quad (c_1, \tilde{c}_2) = (y_1 - s, \tilde{y}_2 + (1+r)s)$

$U(s) = v_1(y_1 - s) + E\delta v_2(\tilde{y}_2 + (1+r)s)$

$U' = -v_1'(y_1 - s) + \delta(1+r) E v_2'(\tilde{y}_2 + (1+r)s)$

assume: $\frac{d}{dc}\left(\frac{v_2''}{v_2'}\right) < 0$
$\Rightarrow v_2' > 0$
$v_2'' < 0$
$v_2''' > 0$

$\tilde{y}_{2A} \to \tilde{y}_{2B}$ $\quad y_2$ declines $\Rightarrow$ save more
$\succ_{FO}$ $\quad$ in both cases
$\succ_{SO}$

---

3 conditions for $\overset{N=I}{pCM} = \overset{N>I}{pICM}$:

1) homothetic v (CRRA)
2) identical
3) $w = \sum \lambda_i a_i$