$\succsim$ RACIONALES

L.N.S $\Rightarrow$ $\downarrow$ $\leftarrow$ CONTINUIDAD

$$
\begin{tikzcd}
 & u(\cdot) \arrow[dl] \arrow[dr] & \\
x(p,w) \arrow[d] & & h(p,\bar{u}) \arrow[d] \\
v(p,w) \arrow[u, bend right, "\text{Roy}"'] \arrow[rr, leftrightarrow] & & e(p,\bar{u}) \arrow[u, bend left, "\nabla_p e = h"]
\end{tikzcd}
$$

$\underset{\{x\}}{\text{MAX}}\ u(x)$ s.a. $px \leq w$

LEY WALRAS

$p \cdot x(p,w) = w$

$x(\alpha p, \alpha w) = \alpha^0 x(p,w)$

v crec. w

$\lambda = \partial v / \partial w$

$e(p,\bar{u}) = h(p,\bar{u})p$

e crec. $\bar{u}$

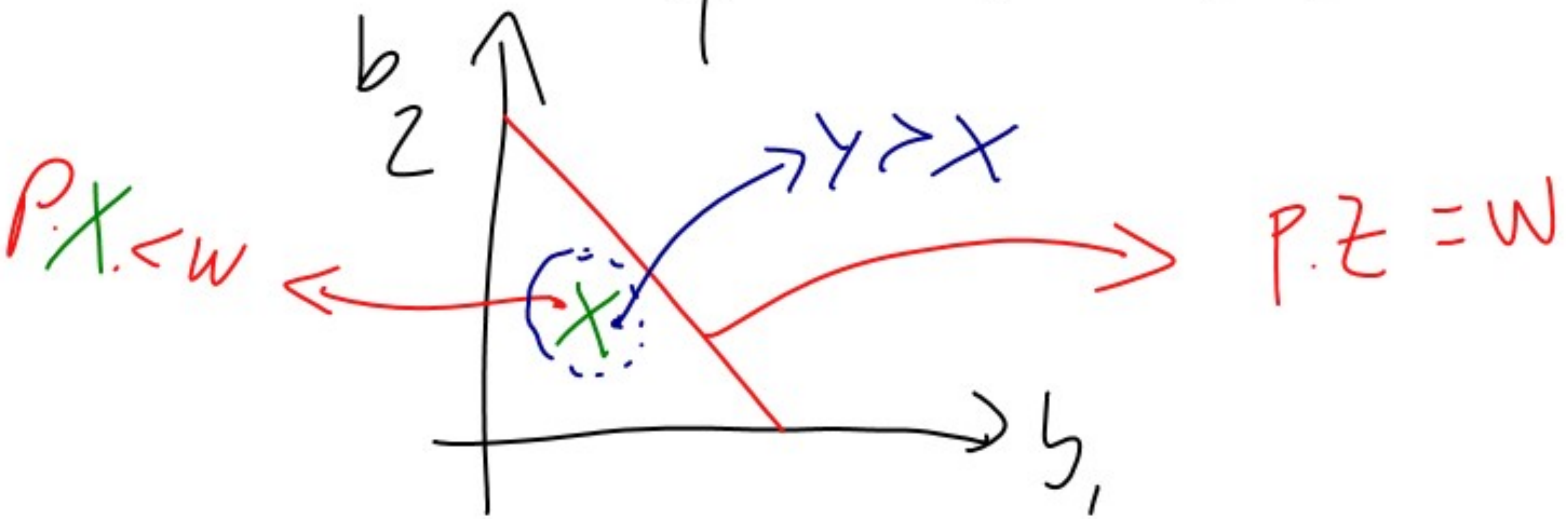
e cóncava

TEO) $\succsim$ CONTINUAS, RACIONALES, L.N.S.

$\Rightarrow \ p\,X(p,w) = w$

POR CONTRADICCIÓN:

SUPONGAMOS $\exists$ $p \cdot X(p,w) < w$



HOMOGENEIDAD $r \in \mathbb{R}$: $f: \mathbb{R}^n \to \mathbb{R}$

ES HOMOGÉNEA GRADO R

$\iff f(\alpha z) = \alpha^r f(z) \quad \alpha \in \mathbb{R}_{++}$

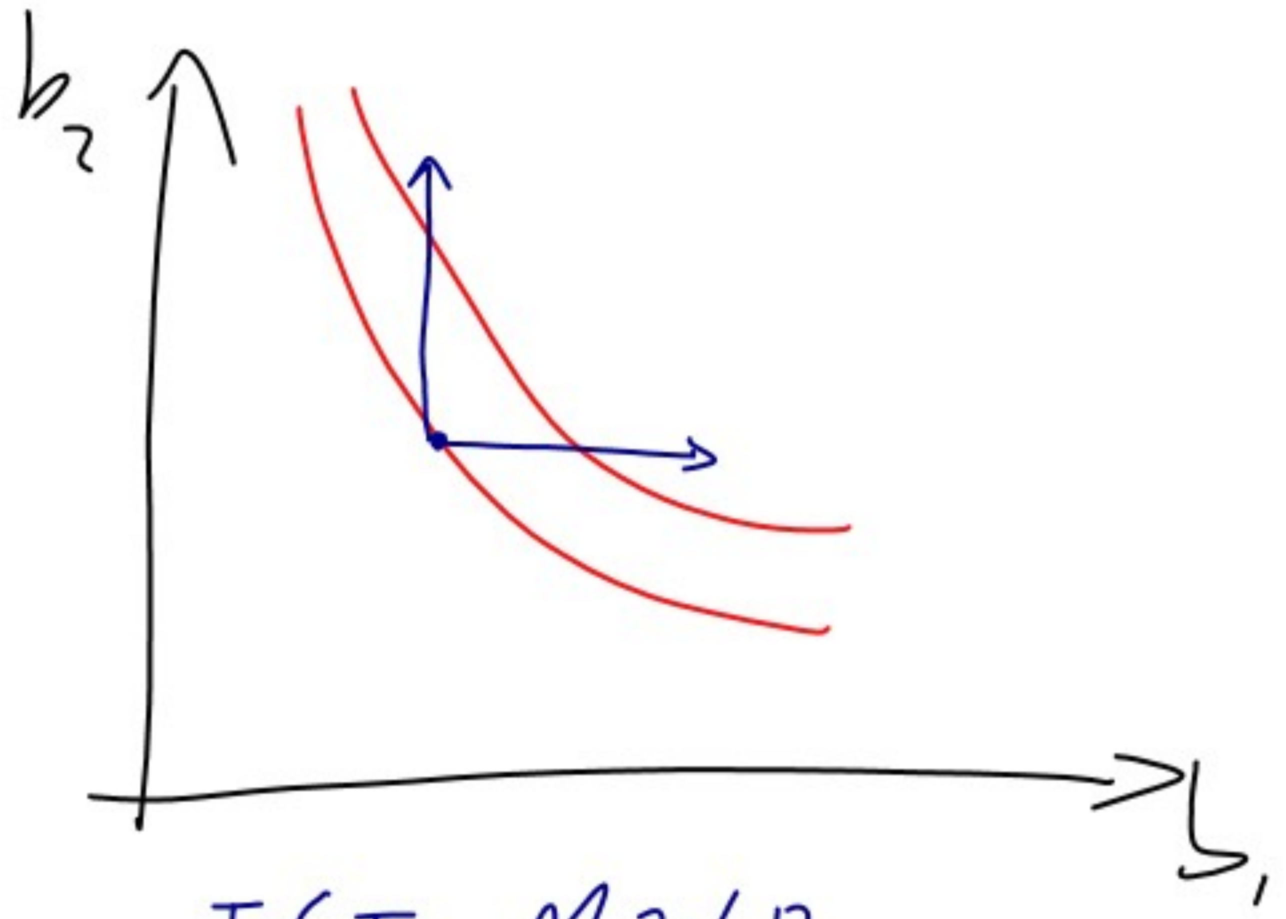
COBB-DOUGLAS:

$$u(\alpha x_1, \alpha x_2, \ldots \alpha x_n) = \prod_{i=1}^{n} (\alpha x_i)^{\beta_i} \qquad \beta_i > 0$$

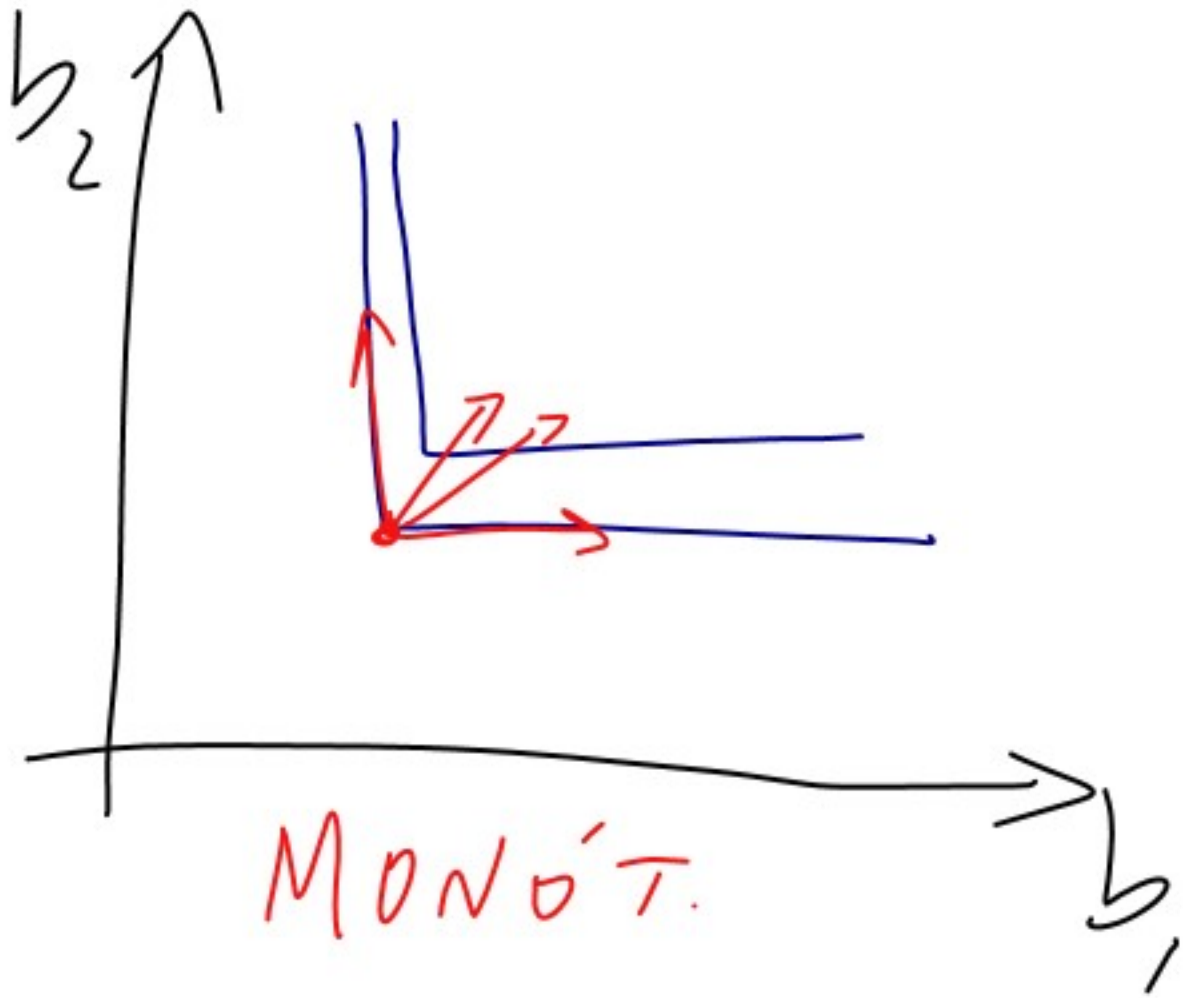
$$= \prod_{i=1}^{n} \alpha^{\beta_i} x_i^{\beta_i} = \alpha^{\sum_i \beta_i} \prod_i x_i^{\beta_i}$$

(1) $\sum \beta_i = 1$

$u(\alpha x) = \alpha u(x)$



EST. MONO.



MONÓT.

$$X \gg Y \iff \forall i = 1, 2, \ldots N \quad x_i > y_i$$

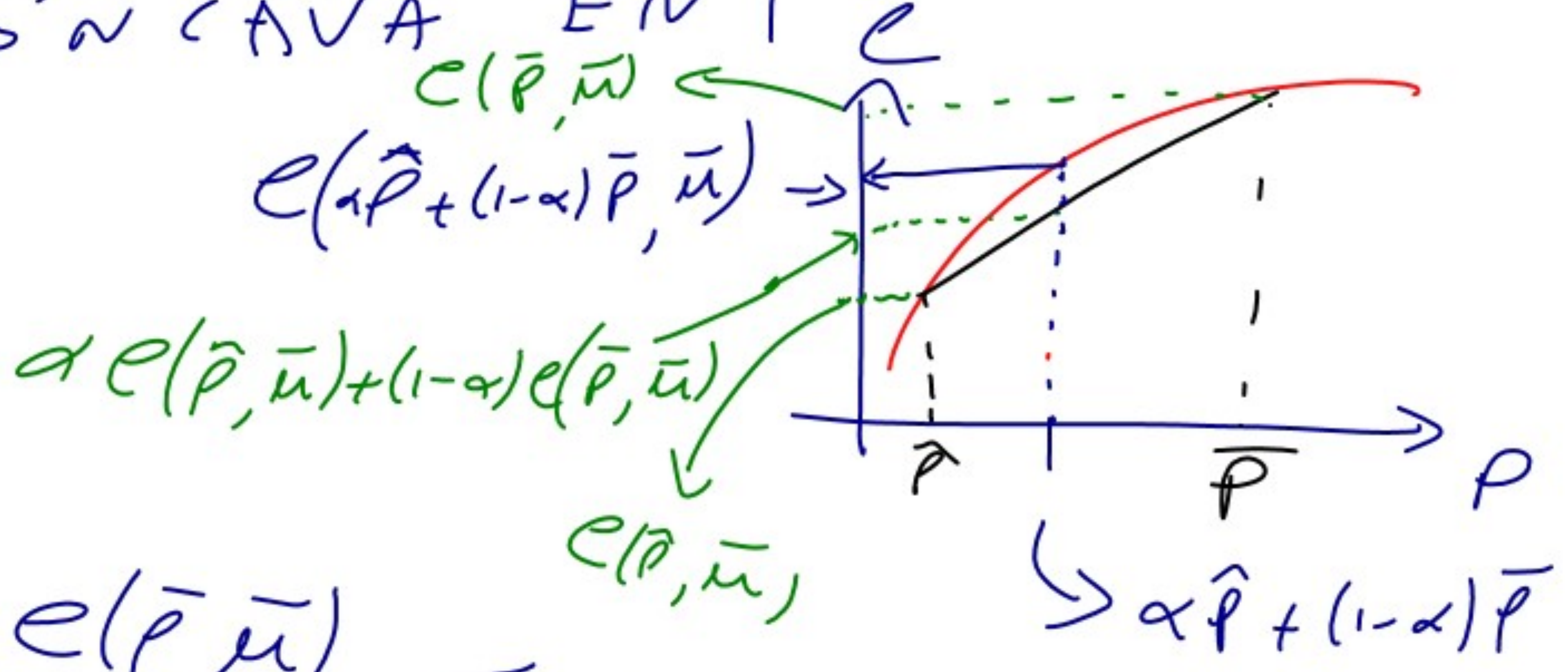
$$X \geq Y,\ X \neq Y \iff \forall i = 1, 2, \ldots N \quad x_i \geq y_i \ \wedge\ \exists j : x_j > y_j$$

$\boxed{\succsim \text{ RACIONALES}}$

$\succsim$ SON MONÓTONAS $\iff \left[X \gg Y \Rightarrow X \succ Y \right]$

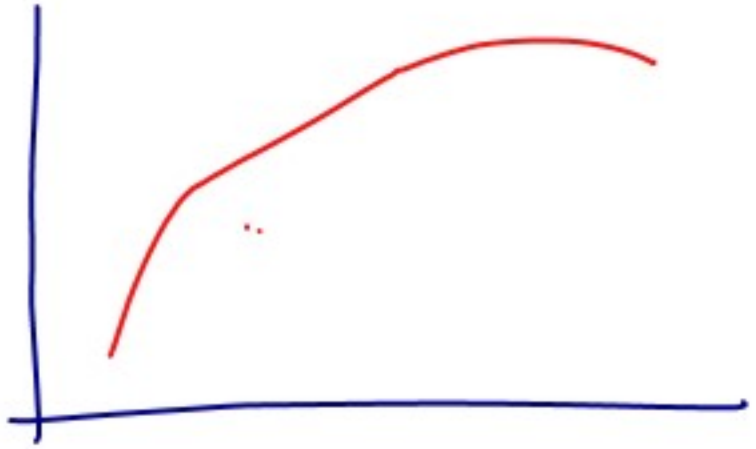
$\succsim$ SON ESTRICTAMENTE MONÓTONAS $\iff \left[X \geq Y,\ X \neq Y \Rightarrow X \succ Y \right]$

P.D. $e(p,\bar{u})$ CONCAVA EN p



$$\alpha\, e(\hat{p},\bar{u})+(1-\alpha)\, e(\bar{p},\bar{u}) \leq e(\alpha\hat{p}+(1-\alpha)\bar{p},\bar{u})$$

$0<\alpha\leq 1$



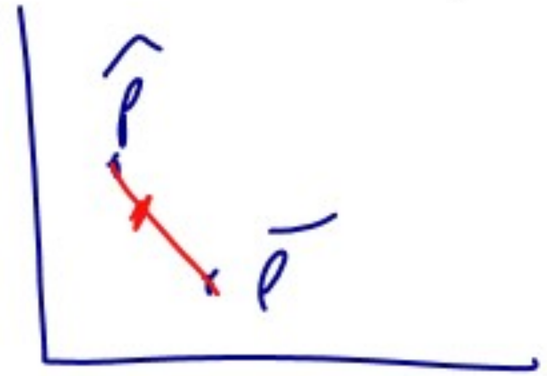
$$\alpha\left[h(\hat{p},\bar{\mu})\hat{p}\right] + (1-\alpha)\left[h(\bar{p},\bar{\mu})\bar{p}\right)$$

$$\leq \underbrace{h\left(\alpha\hat{p} + (1-\alpha)\bar{p},\bar{\mu}\right)\left(\alpha\hat{p} + (1-\alpha)\bar{p}\right)} = \alpha h\left(\alpha\hat{p} + (1-\alpha)\bar{p},\bar{\mu}\right)\hat{p}$$

$$+ (1-\alpha) h\left(\alpha\hat{p} + (1-\alpha)\bar{p},\bar{\mu}\right)\bar{p}$$

P.O. $h(\hat{p},\bar{\mu})\hat{p} \leq h(\alpha\hat{p} + (1-\alpha)\bar{p},\bar{\mu})\hat{p}$

P.O. $h(\bar{p},\bar{\mu})\bar{p} \leq h(\alpha\hat{p} + (1-\alpha)\bar{p},\bar{\mu})\bar{p}$



7) LOCALMENTE NO SACIADAS:

$$\Updownarrow$$

$$\forall \varepsilon > 0 \quad \forall x \in X \quad \exists y : \|x - y\| < \varepsilon \wedge y \succ x$$