Dec 9^{th}, 2024

A Walrasian equilibrium in the Edgeworth is a profile of prices p^* and an allocation $x^* = (x_1^*, x_2^*)$ s.t. $\forall\ i = 1,2$

$$x_i^* \succsim x_i' \quad \forall \quad x_i' \in B_i(p^*)$$

$$x_1^*(p^*, p^* \cdot \omega_1) \in OC_1$$

$$x_2^*(p^*, p^* \cdot \omega_2) \in OC_2$$

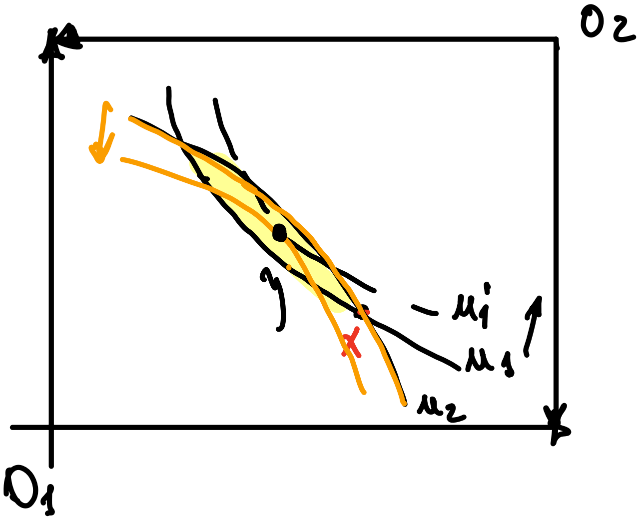
An allocation x is Pareto efficient in the Edgeworth box if there exists no other allocation x' (in Edgeworth box) such that

$$x_i' \succsim x_i \quad \forall\ i = 1,2$$

and

$$x_i' \succ x_i \quad \text{for some } i$$

INEFFICIENT ALLOCATIONS



x is NOT PARETO EFF.

y PARETO DOMINATES x

$$u_1(y_{11}, y_{21}) > u_1(x_{11}, x_{21})$$

&

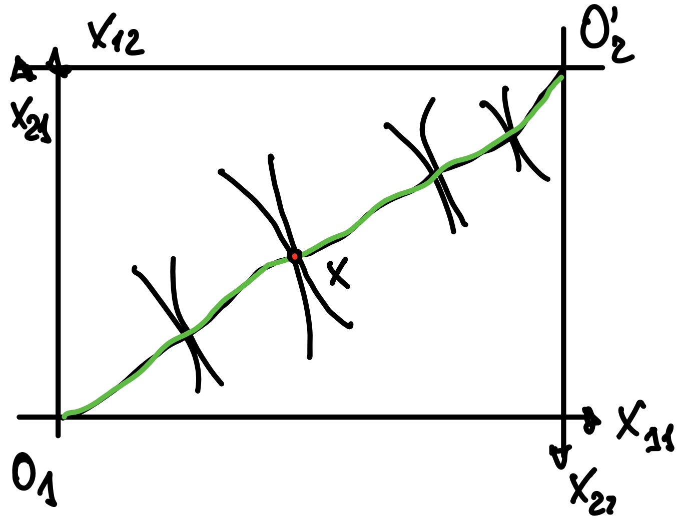
$$u_2(y_{12}, y_{22}) > u_2(x_{12}, x_{22})$$

$$y = (y_1, y_2)$$

$$u_1(x_1) < u_1(y_1)$$

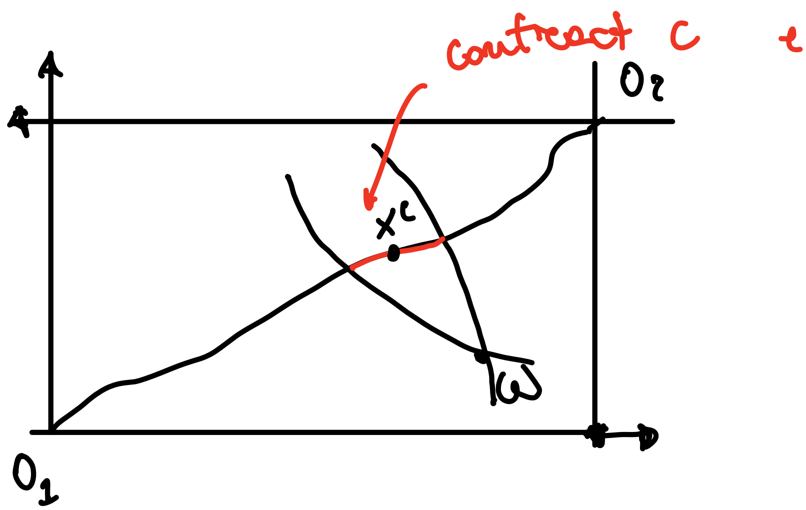
$$u_2(x_2) < u_2(y_2)$$

y Pareto dominates x $\Rightarrow$ x is NOT Pareto efficient.



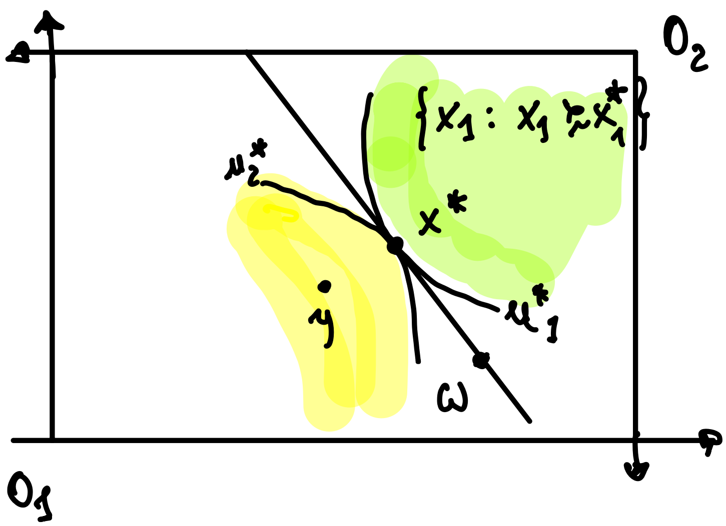
x is Pareto efficient.

the Pareto set is the set of Pareto efficient allocations.



$x_i^c \succsim \omega_i$

the contract curve is the subset of the Pareto set in which each consumer obtains a utility which is at least equal to her autarkic utility.



Any Walrasian equilibrium allocation x^* belongs to the Pareto set.

Def. An allocation x^* in the Edgeworth box is supportable as an equilibrium with transfers if $\exists$

- a price vector p^*,
- a system of transfers T_1^*, T_2^* s.t.

$$T_1^* + T_2^* = 0$$

such that

$$x_i^* \succsim x_i' \qquad \forall\ x_i' \in \mathbb{R}^2_+$$

$$\text{s.t. } p^* \cdot x_i' \leq p^* \cdot \omega_i + T_i \quad \forall i$$

If $\succsim_i$ are continuous, strictly convex and strongly monotone, then any Pareto efficient allocation is supportable as an equil. with transfers.