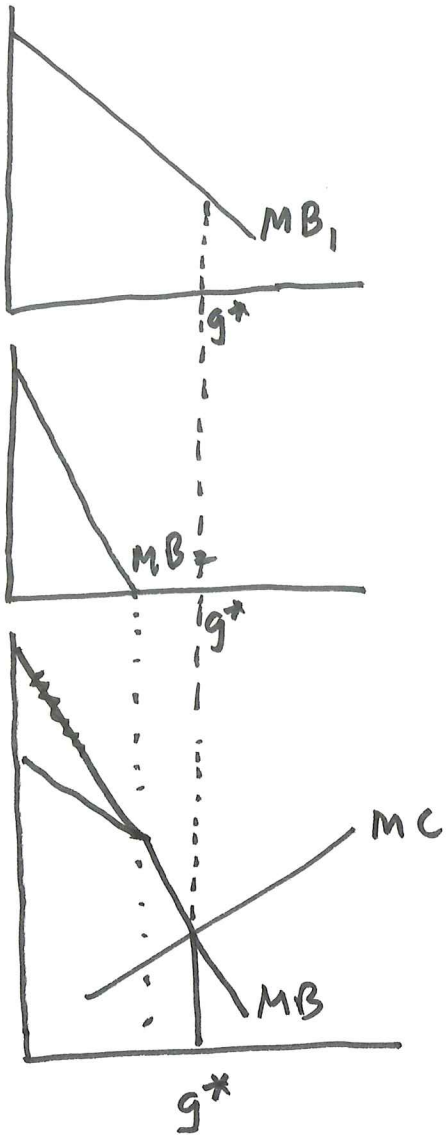
Public Goods

Non-excludable → markets don't work

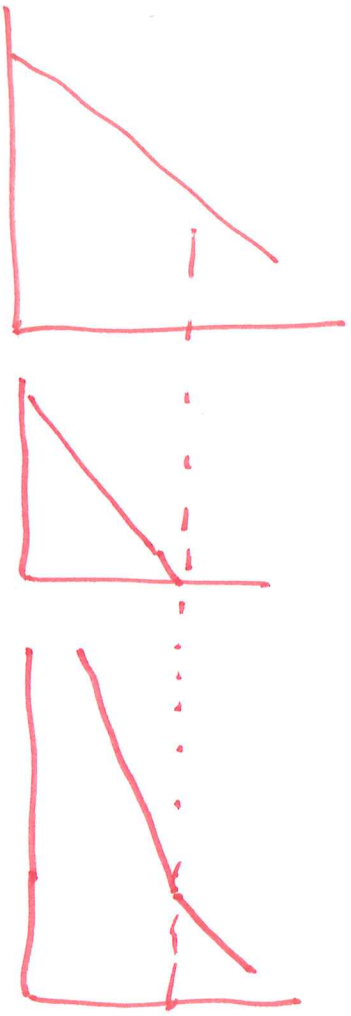
Non-rival

Partial Equilibrium:



12/3

Correction.



Condorcet Paradox

A	$L \succ M \succ H$
B	$M \succ H \succ L$
C	$H \succ L \succ M$

L vs M $\rightarrow L^*$

M vs H $\rightarrow M^*$

L vs H $\rightarrow H^*$

Arrow's Impossibility Theorem

1. Ordering : Complete : capable of choosing under all circumstances

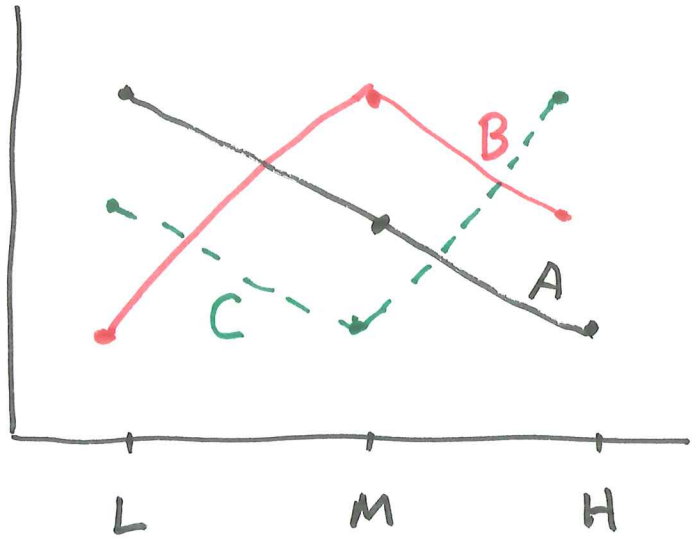
   transitive.

2. Pareto criterion. If everybody $A \succ B$ then $A \overset{S}{\succ} B$

3. ~~Irrel~~ Independence of Irrelevant Alternatives : in choosing A vs B, prefs. over C should not matter

4. Non-dictatorship

If individual preferences are single-peaked, then the median voter rule is a SDF.



Hotelling model of location.

$P_g = \$5$ $\quad q = 240x - 2x^2$ $\quad$ AFC (hats)

$x = L^{1/2}$ $\quad w = \$10$ $\quad$ TJC (skins)

(a) TJC is monopolist, AFC is a price-taker

$$MP_x = 240 - 4x$$
$$MRP_x = 5(240 - 4x) = 1200 - 20x$$
$$P_x = 1200 - 20x$$

$$\pi_{TJC} = 1200x - 20x^2 - 10x^2$$
$$\frac{d\pi_{TJC}}{dx} = 1200 - 40x - 20x = 0$$
$$60x = 1200 \rightarrow x = 20$$
$$P_x = \$800$$

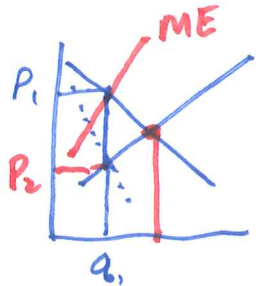
(b) AFC is monopsony, TJC is price-taker

TJC: $MC = 20x \rightarrow$ supply curve: $P_x = 20x$

AFC: $\pi_{AFC} = 1200x - 10x^2 - 20x^2$

$$\frac{d\pi_{AFC}}{dx} = 1200 - 20x - 40x = 0$$
$$x = 20$$
$$P_x = \$400$$

(c)



$20x = 1200 - 20x$

$40x = 1200 \rightarrow x = 30$

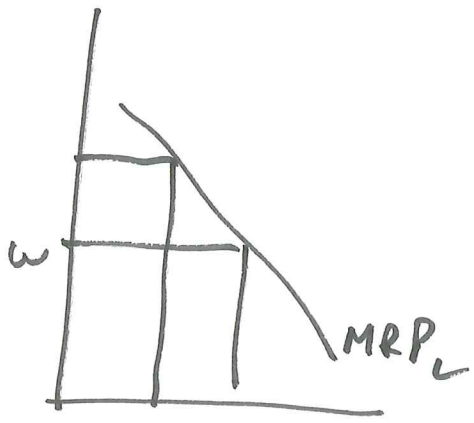
$P = \$600$

$R[g(L)]$

$$\pi = R(L) - wL$$

$$\frac{d\pi}{dL} = \underbrace{MR_L} - w = 0$$

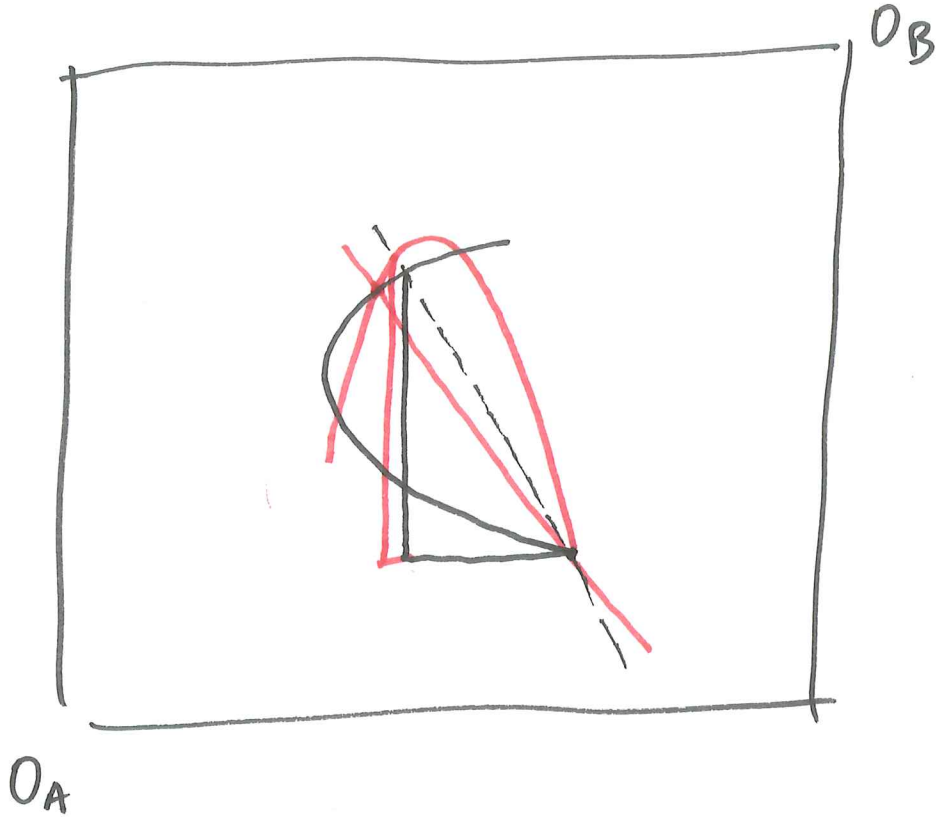
$$\underbrace{\frac{dR}{dq} \cdot \frac{dq}{dL}}_{MRP_L} \quad \underbrace{MP_L}$$

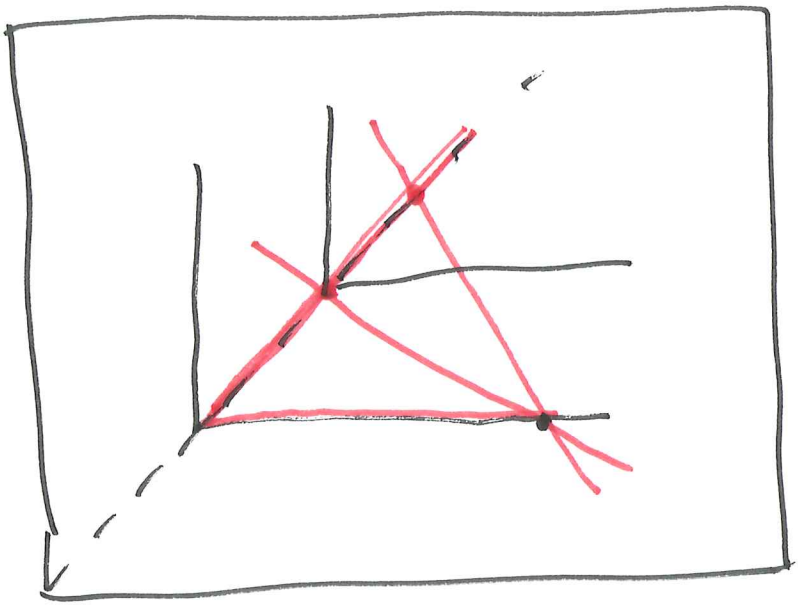


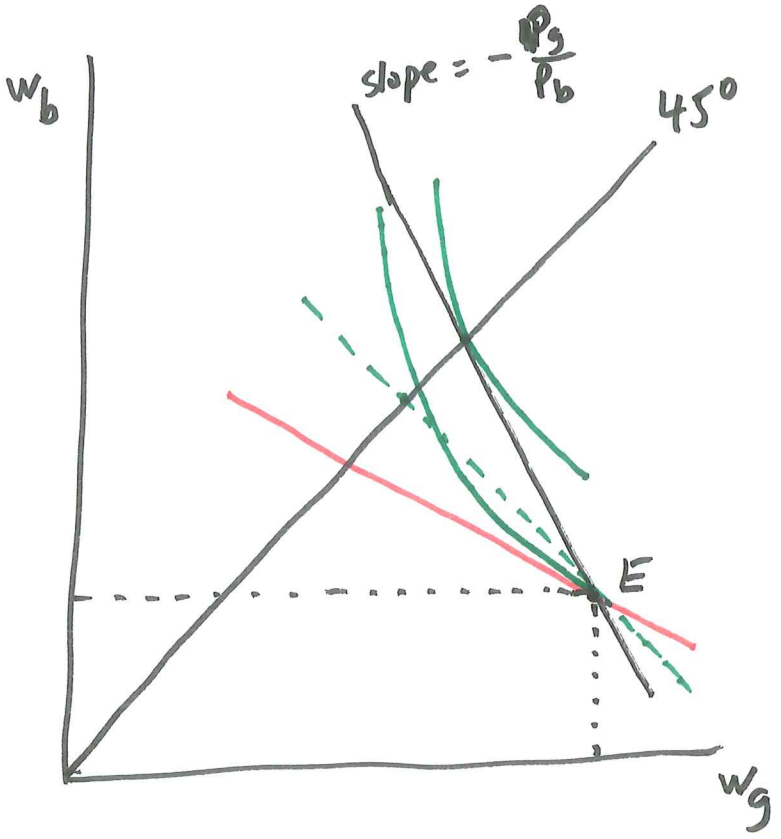
~~$\pi_{TJC} = 1200x -$~~

$$\pi_{TJC} = P_x x - 10x^2$$

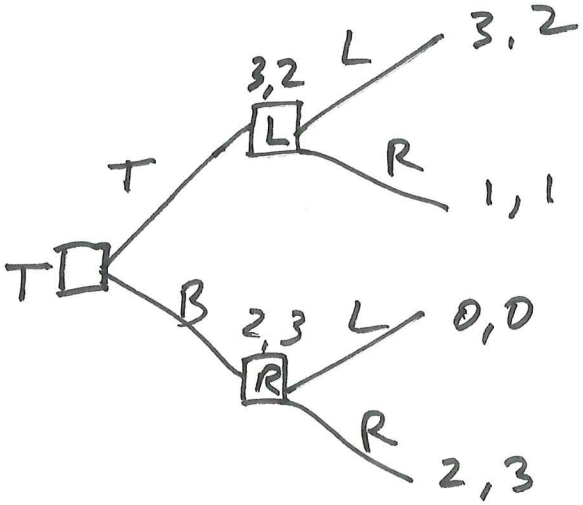
$$\frac{d\pi_{TJC}}{dx} = P_x - 20x = 0$$


O_B
O_A





	L L	L R	R L	R R
T	3, 2	3, 2	1, 1	1, 1
B	0, 0	2, 3	0, 0	2, 3



	L	R
T	3, 2	1, 1
B	0, 0	2, 3