January 30.

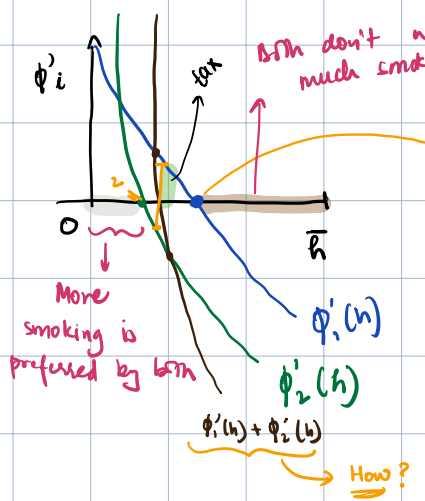
EXTERNALITIES

So far philosophical case for markets:

$$u_i = \tilde{\phi}_i(x_i) + \underbrace{m_i}_{\downarrow\ M_i - px_i} = \phi_i(x_i) + M_i$$

where $\phi_i(x_i) = \hat{\phi}_i - p_i x_i$

$\phi_i'(x_i) = 0$



* Ind 1 Consume cigars until here $MD = 0$

* 2 Ind 2 would prefer Ind 1 consume cigars until this point.

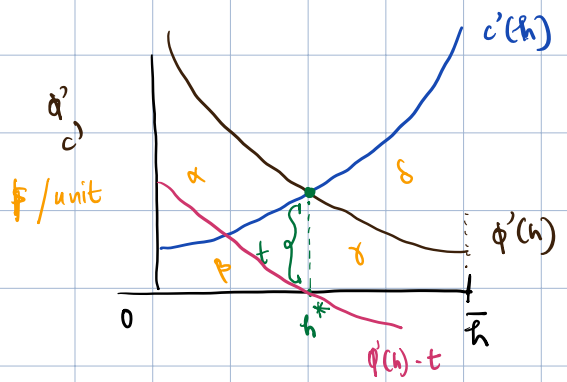
individual 1 producing

2 suffering from it

Individual 2 likes small qty of cigars but not much.

* Pigou(vian) Taxation : $t > 0$

(Draw the subsidy version of it).



consume h as much as she is able to do.

φ' →

Social Max. Problem $\phi(h) - c(h)$

FOC: $\phi'(h^*) = c'(h^*)$

Original CS to cons 1 = $\alpha + \beta + \gamma$ | Original CS to cons 2 = $\beta + \gamma + \delta$

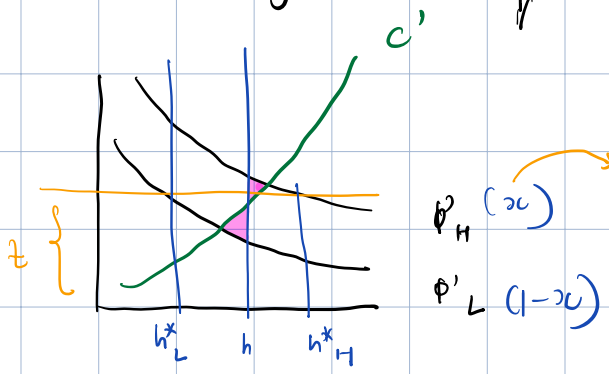
Social welfare: $\alpha - \delta$

New social welfare = α (Add why this is so).

* Weitzman.

Is tax better or quota

Q) How to optimally set the quota?



Weitzman.

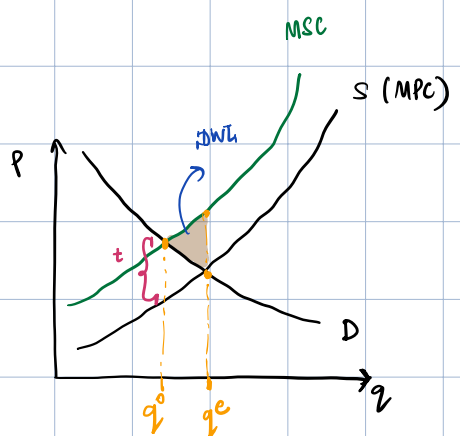
$$\max_{\hat{h}} S = x\phi_H(\hat{h}) + (1-x)\phi_L(\hat{h}) - c(\hat{h})$$

$$x\phi'_H + (1-x)\phi'_L = c'$$

$$x(\phi'_H - c') = -(1-x)(\phi'_L - c')$$

| you equate the probability weighted marginal dwl

Class II

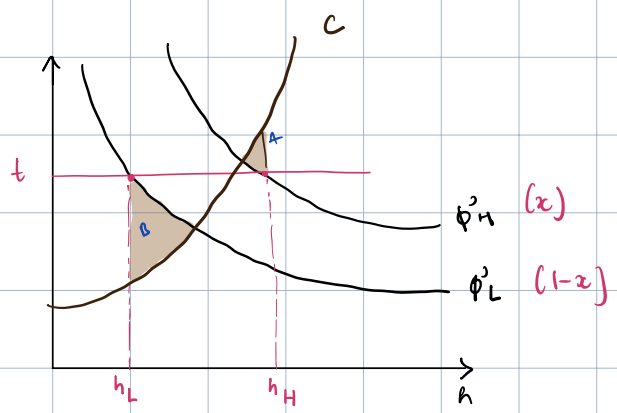


- MPC : Marginal Pvt. Cost
- MSC : Marginal Social Cost

DWL from overproduction

- These are Aggregate demand & Aggregate supply curves.

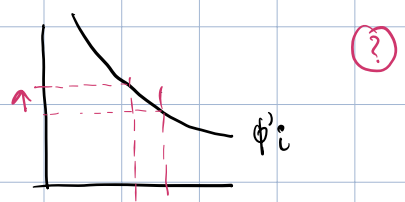
* Getting back to quotas / taxes :—

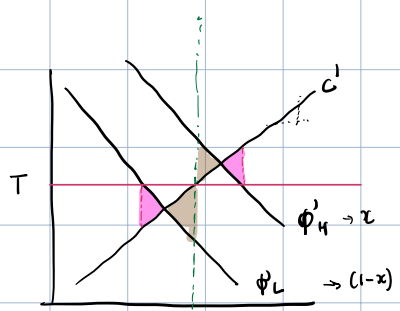


- A & B are DWLs.
- By changing t, you can inc A & reduce B or vice versa.
- Equate probability weighted marginal DWL.

* Taxes are only returned to the public $ for $.

* Lagrangian (in the handout)

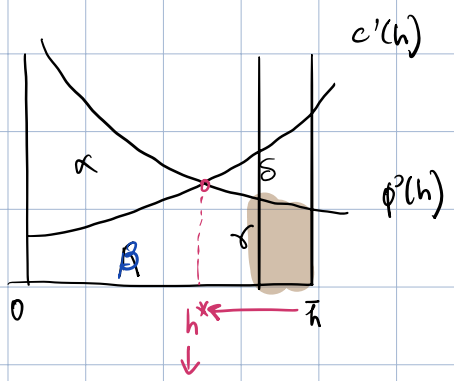




ϕ'_H & ϕ'_L are parallel, same probability
⇒ quota in the middle

The flatter the MC, taxation is the optimal

* Coase Theorem.



* Pt. of mutually advantageous trade

* They both know pvt Marginal benefit curves
* Govt. sets the property rights.
* Absence of transaction costs

Property Right

(PR) $\bar{h}$ take it or leave it by 1

$\max \phi(h) + T$

T?: $M_2 - c(\bar{h}) \leq M_2 - T - c(h)$

$$\mathcal{L} = \phi(h) + T - \lambda(\underbrace{\phi(h) + T - c(\bar{h})}_{=0})$$

$\lambda = 1$

$\phi' = c' \Rightarrow h^*$

$T = \gamma + \delta$

* Do alternative case when property right is with the sufferer. / take it or leave it offer by (2).

* Remember minimize!

$$\min \; c(h) + T \quad \text{s.t.} \quad \phi(\bar{h}) \leq \phi(h) + T$$

$$\mathcal{L} = c(h) + T + \lambda(\phi(\bar{h}) - \phi(h) - T)$$

$$\lambda = 1$$

$$\phi' = c' \Rightarrow h^*$$

(*) We get ~~to~~ the same place.

If ~~pro~~ govt mandates at 0, the social surplus at grabs $= \alpha + \beta$