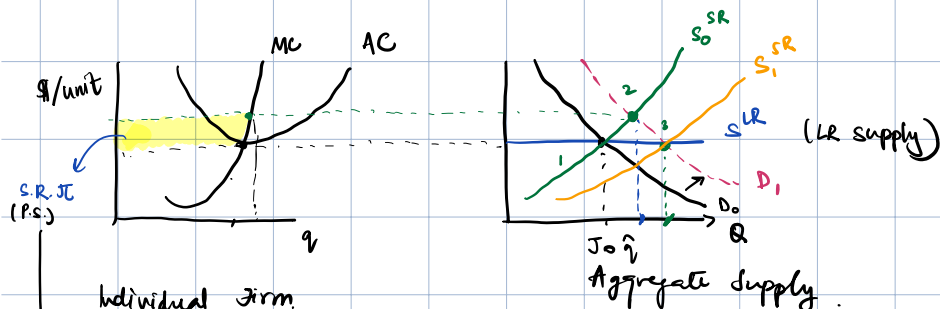


January 25, I

* Market Mechanism:



SR: $MC = P$

Think about why the trapezoid is not in it.

Exogenous increase in D.

1 → 2 → 3
SR LR

Everyone producing at the most efficient level.

① S_i^{SR} is flatter than S_0^{SR} .
(because there are more firms now).

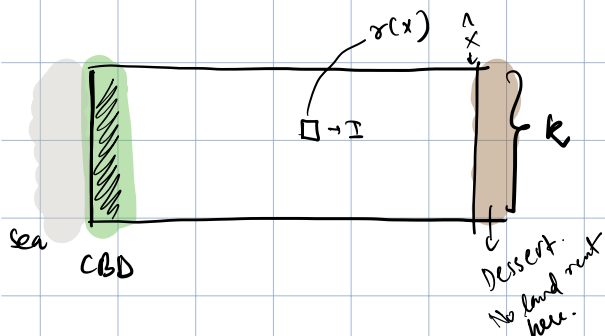
0 → no. - firms
firms are identical

For simplicity,
we have drawn
a horizontal supply
curve.

* Ricardo:-

land rent: incremental value of land when used in its best way.

Residential Land Rent.



• everybody has the same land price (I)

• everybody has to go to CBD.

• It cost t /mile to travel

① k = width of the city

② M → number they have at the start.

$$u = M - tx - r(x)\bar{L}$$

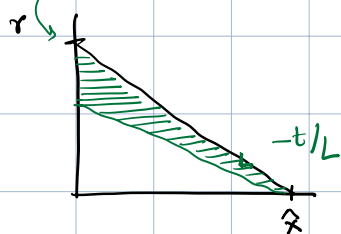
$$\hat{x}k = \bar{n}\bar{L} \quad \hat{x} : \text{endogenous.}$$

$$tx + r(x)\bar{L} = \frac{tn\bar{L}}{k}$$

$n \rightarrow$ no. of people
in the city

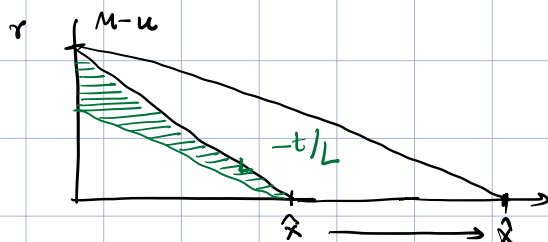
$$r(x) = \frac{tn}{k} - \frac{tx}{\bar{L}}$$

[This is a closed city model.]



In real world, the opposite happens (when the transport cost go down, rents go up). But this is because n is not fixed,
 $\hookrightarrow u$ across cities would be the same.

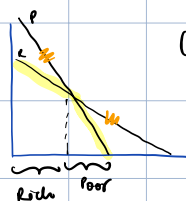
* Now n is endogenous but u is fixed (everywhere across cities u is the same).



① 2 types of agents : Rich & Poor. || Closed City Model.

$t_p < t_r$: rich people are willing to pay more. Value their time more.

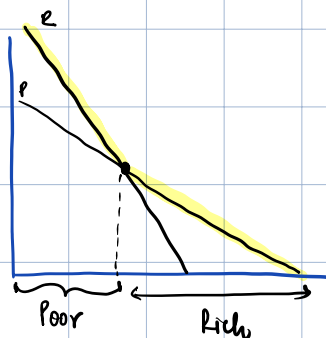
$l_p < l_r$: rich people want bigger lots.



(This is not possible, poor would pay more, rich would pay more for things on right)

in left. suppose :-

$$\frac{t}{L} \Big|_p > \frac{t}{L} \Big|_r$$



$$\textcircled{\bullet} \quad u = l^\alpha m^{1-\alpha} \quad (C-D)$$

$$m = \underbrace{M - tx - rL}_{\substack{\downarrow \\ \text{net income } \hat{y}}}$$

$$L = \frac{\alpha \hat{y}}{r} \quad (\text{Property of CD})$$

$$m = (1-\alpha) \hat{y}$$

$$V = \frac{k_1 \hat{y}}{r^\alpha} \rightarrow \text{constant. (same for everybody)}$$

$$r = k_2 \hat{y}^{1/\alpha} \quad k_2 \text{ again constant.}$$

$$\hat{y} = m - tx$$

$$\left\{ \begin{array}{l} r' = -\frac{t}{\alpha} \hat{y}^{1/\alpha - 1} < 0 \\ r'' = +t^2 \frac{1}{\alpha} \left(\frac{1-\alpha}{\alpha} \right) \hat{y}^{1/\alpha - 2} > 0 \end{array} \right. \begin{array}{l} \nearrow \text{why \& where did } k_2 \text{ go?} \\ \searrow \text{we are only concerned about the slope here.} \end{array}$$

→ convex

This is not linear
because as land gets away
from downtown, people also
buy larger lot size.

