Ec. 520 Old notes

Suppose C_0 is const., what is MC of time?

a. ~~Before~~ After $t=0$, $MC=0$
b. Before $t=0$, $MC=0$

$MC>0$ only if $C_0 = f(t)$; and view is before $t=0$.
Then MNR of time < AGR when AGR is max.

If ~~All~~ expect series of future land uses yielding ever higher a, then cut short the present use before max a.

Max. PV of inf. series of future uses.

PV of each $= \sum [R_n (1+i)^{t-n}]$

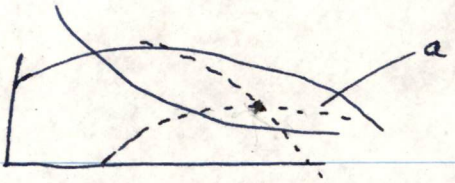
Capitalize by summation of PV of periodic incomes: $r = (1+i)^{-t}$

$$S = \frac{(1+i)^{-t}}{1-(1+i)^{-t}} = \frac{1}{(1+i)^t - 1}$$

Is same as what you get by capitalizing $a = \frac{i}{(1+i)^t - 1}$

Max. that, and get a lower t than when you max. $\frac{i}{i}$

$$a = \frac{\sum_{n=0}^{t} \left[R_n (1+i)^{t-n} \right] i}{(1+i)^t - 1}$$



$$R_{t+1} = a$$

$$\sum \left[R_n (1+i)^{-n} \right] \frac{i}{1-(1+i)^{-t}} = a_t$$

HYPOTHESIS: TO MAXIMIZE a_t, $\Rightarrow$

$$R_t \geq a_t$$

3 opns:

1. Discount
2. Sum, to a lump p.v.
3. Average. ... ~~to~~.

Total package is same as receiving $\underline{a}$ yrly.

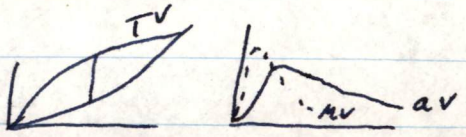
A. So if add another year, and get $\underline{a}$, value of a remains constant.

B. If assume C_0 const. with t, R_n means current rev. less current costs.
a higher type of analysis would let C_0 Δ with planned t.
Then R_n is $R_n - C_n - \Delta C_0 (1+i)^n$.
It doesn't change rule A.

Ec. 520. Wed., Nov. 2

Rent & the allocation of land

1. Older approach. Rent a residual.



Has value. Before going to direct impn., show some applns.

a. Is wrong to max. AP, of land, or non-land.

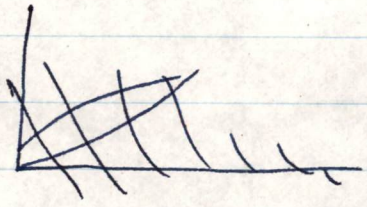
Then mgnl. value of other = 0.

Instead of labor, use bldg. as non-land input.

Have to annualize cost & rev. Temporarily, regard as simple coverage.

Cost per yr., rev. per yr.

Low bldgs. give better ratios.



b. Is wrong to max. $\frac{TV}{TC}$.

" " " " Rent/TV, or Rent/costs, or any other ratio. Don't be fooled by ratios.

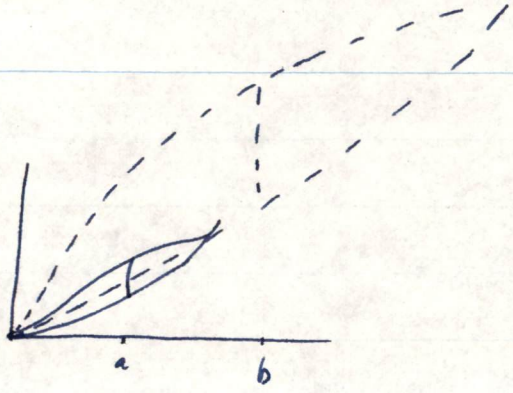
Or "profit", even fizzier.

✓ c. Inverse relation of MPs.

d. Shape of curves depends on units — & there is a wide choice.

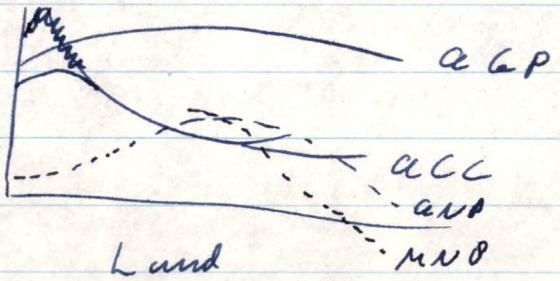
Mon., Nov. 7

e.



(a) Is not nec. best. Maybe go to larger site, get b.

Rent now go to more qual. forms



Aspects

a. Euler's theorem, proof

b. MNP differs from ANP

c. Rent constrains lateral expansion.

d. Rent " scale ecs. Bldgs; streets;

e. " allocates land equimarginally.

f. " economizes on length of distrib. lines.

Before, gave e.g. of whole units

Now, apply to increments

g. Ave. rent weeds out units too small.

h. Refutes idea that risk argues vs. intensity

Ec. base is important as matter of propn.

✓ New region will tend to outgrow its ec. base — i.e., its export indies — bcs. of growth, capl. inflow, surge of construction.

Balance is the key - as in all ecs.

Mon. One day only.

External circ.

Limits to size

Internal

External