

Ec. 146, Used, ~~W94~~
W94

UCR is in T2S from Base Line Rd.
T2S begins where Barton Rd. crosses 15E. Barton is
E-W at that point. Further east, Guaymas Blvd.
is on the line.

T2S ends ^{at} ~~a few blocks s.~~ of Arlington, which is
e-w. (Arlington extended is Ironwood in Sunnyvale)
6th St. in Norco is the s. end of T2S

UCR is in R4W, from our ^{117th} missing Meridian, which
goes a bit east of Highland Sp. Rd. in Cherry Valley

R4W goes from Mt. View Ave. to Pepper Av. in Colton

R5W goes to Boundary Lane. ^{Boundary Lane is n-s.} So we are barely into
R6W.

We are in T3S, which goes from Arlington
to Ed Sobocote - under - L. Matthews.

"San Bernardino Meridian" it's called in ^{Death Valley in} Inyo Co.
There is a Meridian Rd. between Lucerne V. & Barton
It is 117th Meridian.

The Mt. Diablo " is 120th.

The 34th parallel is the Cty. line. Base Line Rd.
is above 34th.

The 38th " goes thru San Rafael & Martinez.

$$P = MC$$

Offstreet Sector

Onstreet "

Ecs. of density

a. Technical

b. Synergy: its elements

Density vs. Scale

Objective of city: max. surplus

Destination of surplus: rent

Defn. of rent

Rent + l.v.

Land as distinctive

(Areas w/o water.)

Indiana 36,045 s.m. $\approx$ 24 m.a.

Ill. 56,043 s.m. $\approx$ 36 m.a.

Md. 9,941 s.m. $\approx$ 6.3 m.a.

Del. 1,965 s.m. $\approx$ 1.3 m.a.

R.I. 1,067 s.m. $\approx$ ~~6.6~~^{0.7} m.a.

Basic msre of urban land is the ff.

One a. = 440 ff. @ 99' deep
= 330 ff. @ 132' deep

at \$1,000/ff, one a. = \$440,000

Why ff. instead of sf?

4-3-2-1 rule of valuation.

SOME USEFUL MEASURES OF LENGTH AND AREA FOR URBAN LAND

1. Measures of length

Chain and rod units are included here. You may think them archaic, but they are basic to U.S. land measurements. George Washington, Tom Jefferson, Mason and Dixon, Anthony Wayne, and other famous surveyors knew them well. Few things are as permanent as the way land is originally divided, because there is massive inertia against unpacking and repacking land parcels. That is a complex social process, involving many more than the direct actors. Therefore, these units are still with us, even if you never heard of them. They are highlighted **in this type**.

- 3' = 1y
- 3.28' = 39.37" = 1 meter
- 4.5' = 1.5y = width of tennis court alley. (Note how sporting areas are measured on the English system, even in countries that have long been on metric. Tradition!!)
- 5' = width of ping-pong table
- 9' = length of ping-pong table
- 13.5' = width of tennis service court
- 16.5' = 5.5y = **1 rod**
- 21' = base of square for footprint of one citrus tree, old standard
- 21' = length of tennis service court
- 27' = 9y = width of tennis court, singles
- 36' = 12y = width of tennis court, doubles
- 50' = width of basketball court
- 60.5' = baseball pitch, mound to plate
- 64' = (appr.) pitcher's throw to 1st base
- 66' = 22y = **4 rods** = **1 chain** = standard width of R.R. r.o.w.
- 66.78' = pitcher's throw to 2nd base
- 78' = 26y = length of tennis court, baseline to baseline
- 85' = width of hockey rink
- 90' = side of baseball diamond, base to base
- 94' = length of basketball court, college and pro
- 99' = 33y = **1.5 chains** = depth of small lot. Because it is close to 100', it is sometimes "fudged" as 100, to go from **chain system** to decimal (but not metric) system. See "standard block." Making lots 99' deep lets you get exactly one block from each 2 acres.
- 127.28' = baseball catcher's throw, home to 2nd base
- 160' = 1/33 mile = width of football field
- 195' = width of Canadian football field
- 200' = length of hockey rink
- 272.25' = 90.75y = length of football sideline for one acre
- 440' = 1/12 mi = "standard" city block, long side, incl. 40' street. This allows for eight 50' lots.
- 660' = 220y = **40 rods** = **10 chains** = 1/8 mi = 1 furlong
- 900' = 300y = typical golf hole, length
- 1320' = 440y = **80 rods** = **20 chains** = .25 mi = standard oval running track

3281' = 1 kilometer = .621 miles

2640' = 880y = **160 rods** = **40 chains** = .5 mi

5280' = 1760y = **320 rods** = **80 chains** = 1 mi = 12 "standard"
blocks

Wed. 27 Apr.

ass. ch. 6

1. Land prices. ~~Group 2~~

a. Edge effect - riparian.
Use of "frontage".

b. Group 2

✓ 2. Bldg. floor rentals, much less variation than l.v.

a) $GR = \frac{A-E}{i} - K(i+d)$
 $\approx (A-E) - K(i+d)$

Leverage on GR, 2 major variables, A and i

b) Now refine

✓ 1) $A-E = cf$ (opp. cf, or OCF)

2) $K(i+d)$ is crude, too high.

$K \times qF$ (amty. factor) is better, slightly higher than i.

✓ c) $LV = \frac{GR}{i}$. Double effect of i .

✓ $LV = \frac{GR}{i-q}$

Triple effect of Δi .

Ec. 146, Mon., 3/28/83

Ass. Quads, Ch. 1-3

Topics

2 basic ~~principles~~ antinomies (or oppositions)

a. Omnisite & g. con
Intersite - & g. con

b. Synergy vs. Leeching (rapping)

Jobs for urbanists, applied econs.

1. Set grounded in basic principles, have many strings in bow. But not to the point of irrelevance. World is oversupplied just now w. abstract philosophers.

2. World bank, infrastructure invt. guidance.

Winding down

Emphasis in future is to be on making extant cities work, operating them. Managing personnel better - a neglected art, for last 20 years.

3. Smaller cities. Neglected. Colo. State, Wyo. Ellensburg, U.S.D.A., Lexington Ky. Ann. Disaba study

4. Assmt. Long pd. of groundwork. demand for professionalizing assmt.

5. Anti-trust. As you break up vertical intr., you restore mkt. fr. of cities. Mkt. produce mkt.

6. Munic. force. In munic. govt; in Fed. govt.

7. Pvt. consulting. Down;

8. Planning, mgmt.

City competes w. corps. To succeed, needs to be as efficiently managed.
And not sell out.

9. Urban leadership, power structures.

Why are most cities run by a few? For a few. How can they be run w. the most effie. mgmt., but for benefit of larger groups.

10. State agencies.

Growing importance.

- a. Munic. derive power from Gov. States
- b. Sup. Ct. passed back time re School Fince.
- c. Farm control fading, so cities shld. have more of a chance.

Urban Econ., Mon. 6 Feb '89.

A, Sensitivity of L.V. to i, r.

1. $Rev. - \text{opm} = c.f.$
 $C.f. - \text{deprecn} = inc.$
 $inc - \underline{\text{int.}} = \text{rent}$

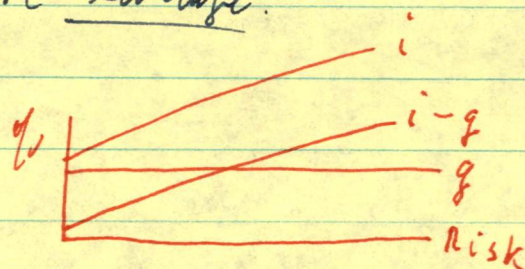
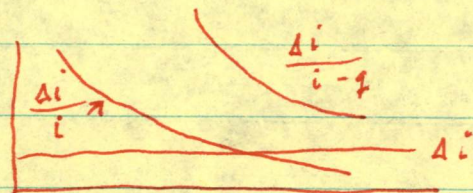
Note Leverage

2. $\frac{\text{Rent}}{i - g} = LV$

Note Leverage.

3. Summary:

$$\frac{Rev. - \text{opm} - \text{deprecn} - \text{int.}}{i - g} = LV$$



B. Survey Use of \$ as msvr.

1. I often lose out. Bookstores; Bocci Ball; bird sanctuaries; lakes for canoes only; trends for biking + hiking only.

Cons. sorry, accepts idiocy of consumer, on grounds the alt. one likely to be worse.

2. The poor may lose out.
 Rationale. Redistribute in cash, not by
 logging up mkt.

3. Some alts. to mkt.

a. Protect soils & agric. "Ag. fundamentalism".
 Gets quite a hearing. zoning - Chris.
 Taxing - Wmsn.

b. Protect env. Mix. materials flow.
 Endangered species.
 Migratory
 Parks.
 Exports?

c. Protect basic indus. (even if they pollute)

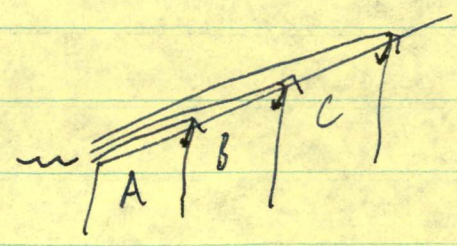
d. Protect fiscal surplus generators

e. Uphold mkt values by w/holding land.

f. Engineers: SEWRPC. Impose standards, ignore
 consumer tastes. Technocracy.
 Boulding.

✓ C. Rent & xptn. cost.

1. Idea of mkt is to save xptn costs.



"Location theory" develops this.

E.g. Travel time & rent gradient to Moreno Valley.

3

#2. Theory is based on part. parties feeling xptn. costs, Abt of them.

Actual location biased by x-subsidy in xptn.

#3. Social importance of compact, dense cities: To min. overall xptn. costs. Reduce distances among parties.

4. Cost-saving settlement patterns.

✓ a. Continuity in space.

Central & axial: star-shaped.

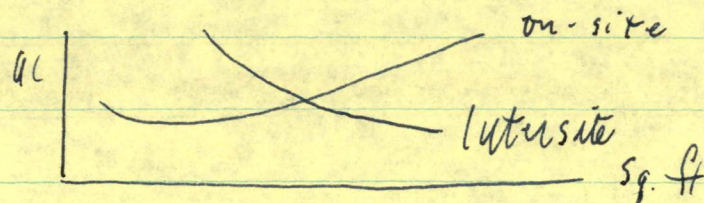
Not sprawled, scattered, leapfrogged - all signs of mkt. & political failure. Sprawl not caused by the mkt.

b. Vertical density; hi lot coverage; hi FAR.

c. Clustering of complements - urban. specialization. (ethnic enclaves, weaken w. time.)

d. Economy of area-sensitive costs

e. Cumulation of savings, once one factor causes compactness. E.g. wtr. supply.



5.

~~As~~ Synchronized response, pvt. to public inv.
L.v. as a community synchronizer. Carrot & stick.

1. Pvt. respond to public

2. Pvt. anticipate each other, "Reciprocating."

Same effect as internalizing externalities.

Gains of scale w/o costs of scale. - one part can survive w/o others, even tho they function as organic whole.

6. Δg returns to city collectively.

Alonso: Larger cities, higher output/cap.

Galbraith: higher l.v. per cap. (Manhattan, S.F.)

Jacobs - vertical disintegration, supplies to major industries. add new works & go off on their own: flexible & dynamic

Summary: Cities exist to bring people together."

City as composite organism.

Each parcel in stage of Δg costs

City as whole, - Δg costs.

a. Area-sensitive costs

b. Synergy

Evidence: 1. Bigger cities, higher output/cap.
2. " " " l.v./cap.

Such Ag returns offer crowding, + lifeboat effect, + tragedy
of commons.

7. But as constraint in space
" " " " Time.

8.

1. Δg cost of streets
- Δg cost of streets
volume
distance.

2. ~~Hydraulic~~
factors: falling; hard; large. (Chf. or Mont.)
Cities as composite organisms.

3. Rent & land use
Defn.
Rent & value
Sectors & circumference
Assmts. of land, & sample values.

4. Internal circ.
Vol. vs. distance.
Vert. vs. Horiz.
X - subsidy
Land spec.; sprawl.
Cost push; cum. nature of auto-dependency.
Ways to contain sprawl

5. Defects of land mkt.

6. External circ.

Muni. mercantilism over hinterland
(Mont. as a colony)

Hurd

Stability of rent
Ease of convertibility.

$$V = \frac{a}{i - g}$$

$$V = \frac{a + gV}{i}$$

$$gV = \Delta V$$

✓ Continuity.

Breaks in continuity lower value. "Like a chain"

\$350/sf recorded land price in NY, Wall + Broad St,
ca. 1873.

And again, 1905, Adm. + 34th.

Moral: premium on central land greater than
than now.

11. Dim. rets. of popn. on res.

Can we extrap. from indiv. firm to whole sec. & world?

Many have said yes, others no.

Looks like a fallacy of comp. - ignores + externalities
& synergism, like Δ specialize.

12. Intensive & extensive margin.

E.g:

~~that~~ Add ht. to bldgs. vs. expand to fringe of city,
on low-rent land.

As a city grows, this happens.

Not because labor is cheaper

" " " " " "

But " land is dearer. Is dearer
bec. is more productive. This is Δg ret. to scale of city.
Synergism. Free lunch, there is something for nothing.

13. Inverse relation of productivities - see pp. 12 - 14

Urban

Wed. 2-13-85

1. Puller, Little Boxes.

2. Clippings

a. World Trade Center, ^{9.4} ~~to~~ in s.f. = 230 acres.
~~Many~~ All of h.a. has 10 m.

Rent: \$100 p.s.f. (per year, 1 premium)

Cf. Queens. 35 p.s.f.

Many years to build & to fill up.

UCA Campus. b. 450 acres, ^{@ \$3/sf} $\uparrow = \$59M = P$; $U = \$7M @ 12\%$
c. More.

3. Rent & city size.

Alonso: bigger cities have higher output/capita.

Higher l.v. p.s.f.

" " per person.

City as whole in stage of Δ_f returns.

Cost of external circ. puts upper limit

N.Y. wtr. tunnel, 3d time, for backup.

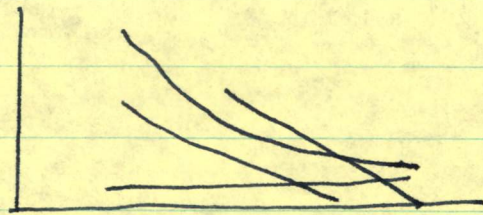
Chi. project, \$11B.

Trunk removal

Monday, 12 Feb.

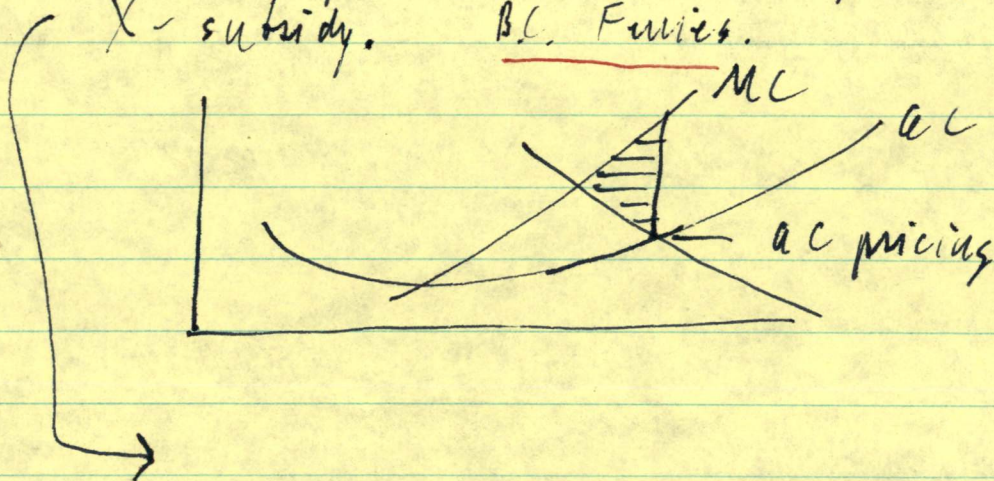
1. Hoover, Motor Metropolis.

Comm. decline of mass transit.



2. Schechter

Pushing up AC curve, w. growing demand.
X - subsidy. BL. Firms.



3. Thompson. Distorted price system

4. Seffing. Cont. Pol.
a. Why contain cities
Loss of soils is tolerable.

A distance is problem.
 NIMBY - LULU problem.
 Wtr.

b. Improve circula.

Disaggregate the AC curve.
 80% of L.V. is in cities.

c. Not for enviro. scarcity; only for effie.

d. Accept cons. rev.

Max. ease of contract

Eas. of density, not simply scale in the abstract.

e. Expand in compact As.; reduce uncertainty.

f. An effie. city grows larger w/o growing vaster.
 A city too vast has mitosis, polynucleates.

g. As rets. to pop & K; neg. rets to space.

i. Flexibility.

Frequent renewal in hot areas.

Renew instead of migrate & expand.

c. Truman Doctrine

Subsid. Control

Greenbelts

Low-dens. zoning

Winston Act

Sub zoning

Use-based assess.

Dead lands

Objections.

Discrim.

Many exploitations

Doesn't contain

d. Neutral cont.

Corruption of the prop. tax.

1. Is good, allows $P = MC$

2. Westside L.D.

Riv. wtr. supply; MWOSC, 3 tiers of subsidy.

Tucson

3. Rich & lean territory

Old & new "

RUSD

Utility postage-stamp pricing.

" rate-base method.

4. County services, utility corp. areas only.
5. Failure to charge for backup capacity when extend services.

Token prst. for extension itself, creates illusion of prst.

E.g. of Riv. wtr. supply.
 " " " sewage treatment.

Inquire at City Hall, is like The Fisherman: "... smelling of strong drink; & the truth is not in him."

6. Intimidating Councilman.

Mediocre; dependent

O'Melveny & M.

Beck

Boud Counsel

City staff

Banks, underwriters

Contractors

7. Rural domination of legis. bodies.

8. See p. 129

9. Residents outside city don't want city anyway. Non-resident owners do.

c, Positive Cont.

Make central city attractive.

Low rates (but hi for street space - Wm. H. Whyte & the parked car). Low for mass transit & pedestrians.

Sewer permits there.

Zoning

Dev. the streets, 3-D

Stop taxing vertical exptn.

Distrib. Equity: raise land tax. Center is
where l.v. are.

2 solutions to gridlock.

1. Graduate meter rates + violations fines by block, by route.

2. Prohibit st. plg, some cases.

3. Prohibit all vehicles too big to avoid ~~crossing~~ using 2 lanes for turns, etc.

Parking tickets.

3 top areas for meter violations
are:

Downtown LA

Hollywood

Westwood

offstreet parking is costly.

LAT 14 May 88, IV-1

Problem: tickets cost same,
regardless of area.

Solution: graduated fines by
area.

Postage stamp pricing: a practical cure.

Reduce delivery frequency + other
service quality in the cost means. Thus,
equalize costs.

Urban Ecs. Wed, 2/24

1. Mowes + talks on loss of farm land. An obsession.

a. But why do avos. cost you 50¢ in store, when grower gets 12¢/lb = 8¢/avo? Hi cost of collection + distribn. Inefficient cities.

b. ~~Great Waste of far~~ Loss of farm land is direct result of underuse of urban land. Focus shld. be on + containment, infilling.

✓ c. When you go after + containment, answer is there is no waste, bcs. city can expand. But there are 3 wastes.

- i. Farm land - (wtg, recr., etc.)
- ii. Synergy. Internal; external.
- iii. Energy + K.

✓ We know about synergy + energy. How about K? Great fallacy of demand side ecs. was to view this as desirable. "Waste ecs."

But payback time is too long.

✓ (Same problem w. external circ. The two together both freeze up cap.)

2.

~~External G~~

Reminder of internal circa: Hoover, Motor Metrop.
Guffey, Cont. Pol.

Will not cover in class.

Fri, 3 May 91

1. Who owns SC? Concr.

2. Mkt. failure

a. ~~Real~~ Diff. access to i. ~~Element B depends on i~~ Loans not self-liq.

b. 2 responses to critic. growth

1. Forcing the future

2. Free-riding on future

- Greedily

- Nostalgically

c. Price unstable

~~then~~ 1. Screws up fact. instas. Loans not self-liq.

2. Misdirects, mischannels capl.

a) Land subst.

b) " enhancing

c) " linking

d) " capturing

d. Lowers savings rate

1. Rising. Equity w/drawal.

2. Being high. Like slaves, & govt. bonds.

e. Low cf. cfd. to price

Esp. rising land. Cf. (a)

Not self liq. $P_i = a + P_g$

f. Labor & K perish w. time

Land appreciates. Owner less

motivated.

✓
Wed, May 8

Land as "monopoly".

Instead, imputed
w/ way by introduct.

a. Not wiped out by compn.

b. Owners' collective lack of motivation makes them act like a monopst.

c. No compn. from new prodn. (old Smith's meaning.) Couple this with being limitational,

d. Is often basis of commod. monopolies.

Alum; sulfur; OPEC; Wall St.; chains; harbors;

Control w/ hold land - is cheaper.

E.g. farm programs.

To p. 18

Urban

1. Xpr. uses land.

28% in streets

Add rails: 10% of Chicago; 5% of most cities.

Add Fwy.

- Parking.

Battle for shelf-space, why?

Filling sta. - 40% of retail in Milw
Drive-ins

2. 1950,

53 Central cities 4 m.a., 50 mil. roads

Urban fringe 4 m.a., 20 " "

8 m.a. = Md. + Del. = .42% U.S.

Farmsteads 9 m.a.

$$8 \text{ m.a.} = \pi r^2, \quad r = 63 \text{ mi.}$$

$$= 2\pi r^2, \quad r = 45 \text{ mi.}$$

Av. urban land = .06 a / cap

Covered by Uds = .4 m.a.

King Ranch = 1 m.a.

Have cities filled up? Not Detroit!

2

Land prices.

1. Lake Shore Dr = "1,000 / ft" = \$10 / sf.
We used to think that was high!

2. Ratios to watch

a. $\frac{L}{L+B}$

b. $\frac{\$L}{\text{pop.}}$

c. FAR

d. Urban / farm

e. Prop. taxes / cap

f. Mortgages

g. Res. value / income

1958, $2\frac{1}{2}$

1988, 6

Qu, Mon, & Apr.

Briefly epitomize the views of

Roger Stein

Wm. Baer

J. G. Wilson (convergence)

G. Myrdal

a. Watkins (pp. 18-19)

Watkins May. 1

Roger Stan:

Triage, to adapt to shrinkage & decline. Gloom.

(Milw. 20% decline, 1960 - date.

Old Milw, greater decline)

(But renewal is also possible. Pittsburgh. Boston.

Wm. Barr

Commentary.

Like slash-&-burn culture.

Like Yankee pioneer, "cowboy" ethic of land non-stewardship: use it & throw it away.

Not a new but the oldest - leads to perpetual imperialism.

J. G. Wilson: (4.7)

Convergence. Sunbelt growth just compensating for prior n.e. dominance. Benign equilibration & uniformity of growth rates. (Omitted here: boom & bust, now felt in Tx.

Watkins pub. in 1980, before Tx collapsed.)

("Sunbelt" too broad. Fl., Tx, ~~So~~ S. Cal., ^{Ga.} etc. & Ariz. are mainly it.)

Myrdal:

Uneven dev.; pos. feed back (aka. ecs. of urban scale, complicated by dynamic growth factors). "Growth spiral".
(Urban synergy: linkages; interdependencies; ecs. of agglomeration).

Watkins:

Favors Myrdal; opposes Wilson.

Disputes benign equilibration, bcs. it is:

- benign
- equilibrating
- undifferentiated
- a-historical
- dull

Next ass. Ch. 2: Location Theory.

Will discuss Fri, M & W. M-W, will have you submit 1-sheet report.

Student papers on Chap. 1, Watkins.

Stam ~~z~~

~~Few~~ ~~No one~~ used "tragedy", (Linda Torger, what is it?)

No one asked what sections of city, shd. die.

Because of sarcasm - "great" Invisible Hand. Too easy, a cheap shot.

Barr

No one asked about renewal.

Wulson,

People accept weird ideas about equilibrium.

Beware of tradition set up to be whipped. Too easy.

~~No one~~ ^{Few} defined equilibrium. Equal size? No equal "growth rates" (presumably $\%$ rates). Steady state? No one wd. advocate that.

If growth moves temporarily to new cities bcs. of cheap land, why persist it always? Why not get homog. l.v.?

"Areas" & "regions" grow poorer. What mean?

People, not regions, are rich or poor.

Wat. assoc. Wulson. ~~at~~ & convergence w. idea inv. hand is benign or favorable. But why?

Unif. growth rates are not inherently benign; ~~neither~~ is "equilibria". Unequal dev. not inherently unfavorable.

Wulson.

For sure there can be an eq. where ^{dis-}pers. of scale ~~the~~ balance eqs. of scale, e.g. N.Y., thus diverting growth elsewhere.

Wat. backhanded testimony of convergence, p. 20 implies convergence thys. says:

~~Cap.~~ Cap. acc. is "dispersed evenly". No one ever said that! Cities agglomerate.

~~Wat.~~ Wat. uses agglom. to whip the system. Says all ~~regions~~ other than ~~city~~ growing cities are "depressed". But depressed regions don't mean depressed people. E.g. of migrations from Vt. Everything migrates except land.

In extreme, one student read Wulson, as saying "devnt. is static". - an obvious oxymoron.

Several asser. convergence w. "self-correcting". Correcting what?

On whole, you let Wat. get away w. too much b.s. Read more critically.

Wed.

Rent vs. profit.

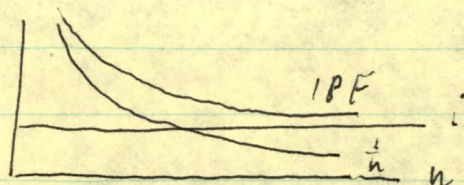
1. $G.Rent = Reits - X_{pus} - K(i+d)$

2. $Reits - X_{pus} = OCF$ ~~is the profit~~

3. $K(i+d)$ is crude

$K \cdot IPF$ is better. $IPF > i$.

$$IPF = \frac{i}{1 - \frac{1}{1+i}}$$



$K \cdot IPF \equiv$ "K-recovery." Means recovery w. int.;
bes. recovery w/o int. is no recovery at all.

4. ~~Land~~ So $GR = CF - K\text{-recovery}$.

5. Land price = $\frac{GR}{i}$ ~~is~~ = ~~$GR \times \frac{P}{GR}$~~

$$\frac{P}{GR} = \frac{1}{i}$$

It also is sunk & arranged.

6. Hand

a. Location

b. GR depends on highest & best use, not current use.

c. "Cap. rates are low where a locality is advancing in value." Explain.

d. STability also lowers cap. rate. Found in large cities. (Also, limits them, by favoring less enterprising owners.)

e. Subjective element in value. "a condition of the public mind."

f. Value depends on nearness. To pt. of contact w. the outer world.

g. Topography modified by human action. Location remains.

h. Growth: concentric & axial.

i. Residences driven out by "business" (retail).
(This has changed some)

j. Bldgs don't always match land
e.g. Sears, f. Hancock, Kemp, State, (Canning Wm)

Divide Rev. in 4 parts

Rev.

Less $o + m$ = cash flow

Less ~~int.~~ deprecn. = gross income

Less int. = rent.

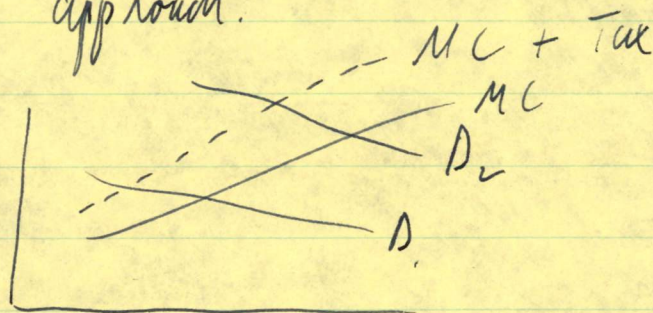
Altho, discount to PV,

But different i.r. used results in mkt. failure.

#

Hi rents do not drive bus. out, net. A misperception.
for restaurant.

Turney's approach.



Richmond on rent.

Vickrey

1. pricing fairness
- a. Peak
- b. Intermodal

a) Peaking

2. Perverse differentiation (anti-peaking)

3. off peak $E > \text{peak } E$
(Also, fringe $E > \text{central } E$, bcs. of lower uses at fringe.)

Anomaly. If off peak E not much used to demand
" fringe E overused) Influence of

specs.

4. Peak demand determines all costs.

5. Fare collection is tech. feasible.

6. BART is more commuter system than urban transit system, i.e., is for suburbs.

b) Intermodal

7. No pricing urban streets.
Gas taxes spent elsewhere.
City taxes pay for streets.
(Is partly OK, streets a l.v.)
Opp. Cost of space $\gg$ hist. cost.

8. So urban streets are underpriced.
So are urban x ways.
(Note relative overuse)
9. Purchase pricing over life span.
E.g. underuse of Brooklyn - Battery Tunnel; o' use
of 11 Manhattan Bx.
10. Peak loads on car-ways most underpriced of all.
11. D.C., 1963, ea. A1 peak car needed \$23,000 cost - for
extra lanes.
Car cost: \$3,000
Ratio: 8:1
But today, ^{red} l.v. have risen, so say 10:1.
12. Same as cost of a house.
(But if commute from a new city, more)
- 13.

Urban Expansion

1. Miscon

$$\text{Rod} = 16 \frac{1}{2}'$$

$$\text{Chain} = 4 \text{ rods} = 66'$$

$$\begin{aligned} \text{Acre} &= 160 \text{ sq. rods} = 10 \text{ sq. chains} = 43,560 \text{ s.f.} \\ &= 4840 \text{ sq. yds.} \\ &= \frac{90.75}{160} \text{ of gridiron.} \end{aligned}$$

(Gridiron is $300' \times 160' = 48,000 \text{ s.f.}$)

✓ Front ft. = 125 s.f.

One acre = ca. 350 ft @ 125. Or 440×99

One front ft. is $\frac{7890}{160}$ across a ball field - $\frac{125}{160} = .78$

(or a gain of 42 yds.)

✓  4-3-2-1 rule of valuation. Shows neg. plottage.

✓ Sq. ft. is more now.

\$1,000 / s.f. in Tokyo.

\$4 / s.f. in W.B.

$$\$10,000 / \text{acre} = 234 / \text{s.f.}$$

$$10,000 \text{ s.f. lot @ } \$4^2 = \$40,000 \text{ in Riverside.}$$

$$\text{Bulboa Isl. } 16 - \$20 / \text{s.f.}$$

2. Source urban land.

a. Natural setting

b. Push out routes

~~Erie~~ Canals: Erie; C + O; B + O;

Pa.; Chicago - Illinois

2

Rails: Chicago
St. Louis "Gateway" (+ fence)

Ports:
San Pedro

Roads etc. -- several stages, overlapping.

Airports.

c. Internal circ.

✓ Half for exports - mostly cars.

Meaning of "compn. for shelf space"

d. Ag returns

So, a few cities catch hold + grow: losses within envoy.

Ec. base effect: Δ exports, reduce imports.

Limit to Ag returns is cost of export, —
~~set~~ and the productivity of the territory reached by
the export.

Another limit is congestion at core.

But this is mainly due to bad orgn., e.g. free street

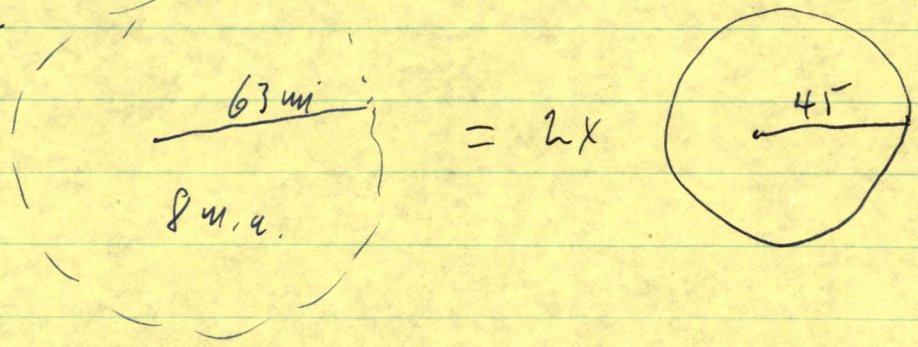
parking in NYC; or declining block rate parking fees; or neglect of subways.

Real internal limit is alienation.

Area:

Lower 48

1. Census urbanized area, 1950. 8/m.a. for Md. + Delaware, = .0042 x 3m sq. mi. = 80% of Conoco's households!
 $\rightarrow .0126 \text{ m. sq.}$
 $9 \text{ m. a. / am. pop} = \text{one acre/person}$ $= 12,600 \text{ sq. mi.}$
 $= \text{ca. } 8 \text{ m. a.}$
 3 m farm families have 9 m.a. in
 farmsteads, cf ~~for~~ 70 m pop. of cities > 50,000. When people move to city, they use less land.
 2.



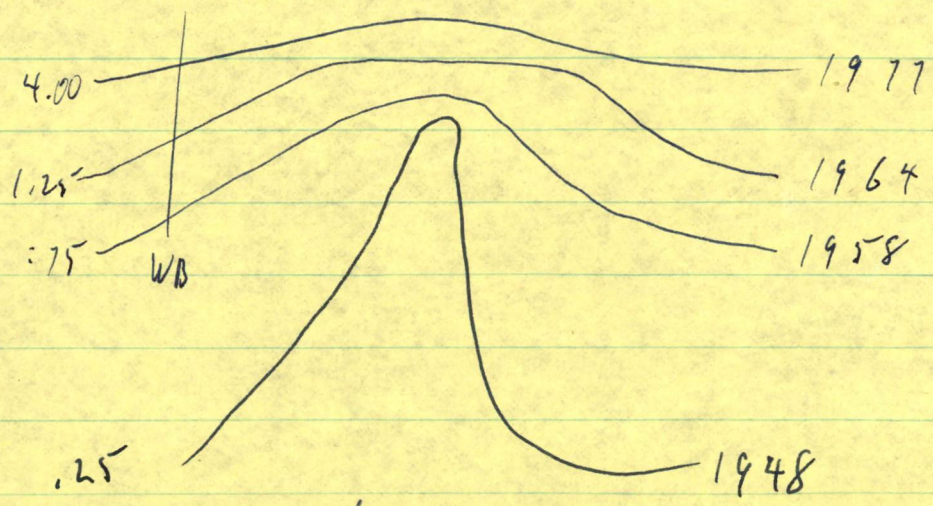
3. Central cities 50 m. pop. 4 m.a.
 But at Bauk's .06 acre/cap. use 3 m.a.
 5 yd. gain is $15' \times 160' = 2450 \text{ sf.}$
 4. Under bldgs. 400 k a.
 (8 m.a. @ 16/a = 128 m pop. at W.H. Bay density)

5. City consumes land w/o using it.
4,000 acres by Ford in Dearborn.
"Prop. to sit on land & pray"

Value : High!

1. Fantastic As since I wrote, ¹⁹⁵⁷ Irvine rents,
e.g.

M.I.W.



8 m.a. x
\$100,000/a
~~\$800b~~
= \$800b

2. Urban values > farm values.
~~also p.c.~~ 4-8 times more
Mortgage debt, 143 urban
10 rural.

5

In 1957, people were arguing that property taxes were bad bcs. urban values were so low. 1978, Janis reversed, and won.

3. Higher % of urban value is land.
B.C. studies
Manhattan
Truehart Study -- Bev. Hills.

Our threat

Overcomes mapy — good. But.

1. Cities losing effie.

2. Wasting farm land

3. Danger of boom & bust.

1. Outmigrants seek cheap land —
but leave empty land behind them.

Quest for cheap land depends on
indiv. seller — tax & credit position.
Now, more than ever. Taxes have become so
personal. In Penna.

Costs of sprawl — Schechter.

The unspoken force behind soaring postage;
power bills; phone bills; gas bills.

Commuting time, messy air paths.

Cost of linking city & country

— decline of "commission row",

local produce.

— outmigration of dairies

— Δ cost of trucking out garbage

— Δ area critical for fire control

Linear patterns -- bes. higher level of govt
forces, highways.

E.g. city trunks in midwest.

Cumulative decline, mass Transit.

2. Taking more land than needed?

Undigested lumps of raw land.
Interfere w. cheap distr. + easy access.

Fragments of sprawl raise spec. hopes.
Price land above reach of plain farms.

Specs. or free-riders are often not farms.
at all. Groves decline. Lumber in S.C. Valley.
Tax preferences to them.

Buy ahead of need. "for expansion"

Winnetka standard, 16 $\frac{1}{2}$ acre/resident.
24 m.u. for U.S. then required.

Neg. Cont.

B.C., Land Comm. Act.

Teeth - really continues

Doubled L-price (Lp) in Vanc.

Not same as Growth Control. GC limits growth everywhere, is non-selective - e.g. no. of bldg permits.

Dead land. Reminds me how recently the muggy view of urban policy was in the saddle. Hamiltonian. "Lock up, lock-out". "Vadonizm" - maintain Lp by artificial scarcity.

Xp_{ten}. cost + fu. of rent. Von Th. et al. assumed priv. xp_{ten}. costs = social cost, i.e. rent shd. be guide. But xp_{ten} is mispriced.

For much equity, modified or "welding",
Postage stamp pricing. Consolidated acts, AL pricing of mass transit, utilities. Utility rate base mntce, urge to extend

Capture of city govts. by suburban specs. Is universal, but take Milw., SEWRPC. MWDSU.

≠ Privated MC pricing. I.D.s as e.g.

Volume Effects vs. Distance Effects

Cont. to let cities grow larger

in pop, not ~~\$~~ area

Δg returns to pop; - Δg returns to land

slow replacement, ~~\$~~ blight & deterioration
result: the Bronx effect

a. Pvt. sites

b. Infrastructure - too long & costly

F-wys in Calif. "America in Ruins"

Urban Thurs., 10 Feb.

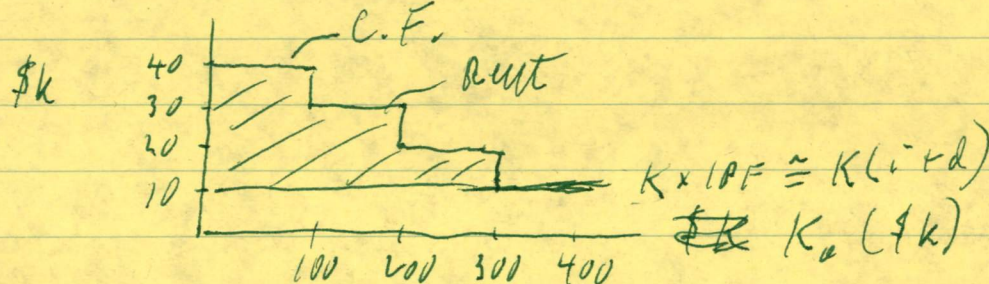
1

O. One move synergy. Reduce need for inter-urban trips & handling.
Foster the import-replacing city.

A. Move on rent

1. Rent makes it expensive to waste land.
Is what causes ec. of land, and $\therefore$ all costs that are fun. of space.
but. does not cause ec. of land.
 $CC \& \text{ of land} = V_i = \frac{a}{i} i = a$
but. causes ec. of K - spread out.

2. Interaction of rent & loc.



3. Fallacy that rent repels. Joe's restaurant.

Rent draws people to hot spot, from 2-dimensions.
Adds a 3rd dim. at hottest spot.

Proximity ~~attracts~~ makes nearby land valuable -
it can subvert - loc. location is basis of value.

L.v. are continuous. h.v. attracts. $\therefore$
the mkt. leads to compact dev't, & infilling.

Fallacy - sprawl rep. cons. sovereignty.

" - efforts to combat sprawl are tyrannical
interference w. free choice.

Rather: sprawl betrays mkt. failure.

The logic of a well sited mkt. is to cluster.
 Min. area costs
 Keep lines short & wide
 Synchronize supply demand.

4. Examples of power of proximity.

a. Arthur. Bradley bldg.

b. Cemeteries, churches.

The St. Petersburg disease

c. Mich. Ave. & State St.

Even Wabash > Mich. Ave.

N. Mich. Ave is high

d. Higher l.v. / cap. in larger cities.

5. Savings in xpter costs.

Living near work - O.C. instead of Morris V.

Husband & wife both find work.

6. "Public Value of Land" - Marshall

3 sources

7. Fys. of mkt.

a. Limit extension in space. - e.g. large yards.

b. " " " time. Force removal.

c. Justify converting to urban use.

d. Lower distance betw. town & country.

Food, dumps, oxygen, clean wtr., gravel, etc.

Rent -

How urban land market
works

Fri. Urban

1. Complete synergy

Fallacy of sprawl as product of free choice. E.g. of Beloit; Ann Jose; Alessandro Hts

2. Rent

1. Define.

2. \$ as common measure.

3. Min. xptn costs. a factor, but o'looks synergy. also wrongly assumes xptn is correctly priced.

4. Rent attracts. Fallacy of rent as repellent or neutralizer.

Continuity.

Cum. & interacting. Subdivisions "Saniment"

"Area-sensitive" costs,

Reduces cost of sprawl. Short lines of hi capex.

Critical value of hub.

Synch. prv. & public

Synch. prv. & prE.

Mutual reflection of external gains.

5. Reduced need of interurban trips.

Self-containment. (Import-replacing). Here is the cause

of Jacobs units: i.e. a good land use, which sprawl kills import re-

3. L.v. show net gains, in spite of disamenities.

Allen-Broadway effect

Cemeteries, churches & Parks (San Francisco solution)

Also, higher L.v. per cap.

1. $\underline{GR_{rent}} = GR =$
 R - all costs,
 all costs = ~~cf~~ ~~debt serv.~~ $E + R \text{ on } K + R \text{ of } K$
 Debt service = last 2 = $K \cdot crf = \text{int} + \text{depr.}$
 $CF = R - E$

$$GR = R - E - K \cdot crf$$

$$= CF - \text{Int} - \text{Depr.} \quad (\text{Depr} = CCA)$$

2. GR not subordinate

Seniority is:

GR

Int

CCA

3. $MR +$ drives to highest rent use.
 3A. Ave + Mgnl rent.
 4. Location thg - emphasis on saving xptn costs
 Irvine vs Moreno V.
 Premises:

a. Pot. cost = ~~of~~ social

b. Magnetism of center

c. Activities located at points.

5. Rent does not drive away, but attract.

~~Fri. 2-15-85~~

Tues - This page only
Urban Rent.

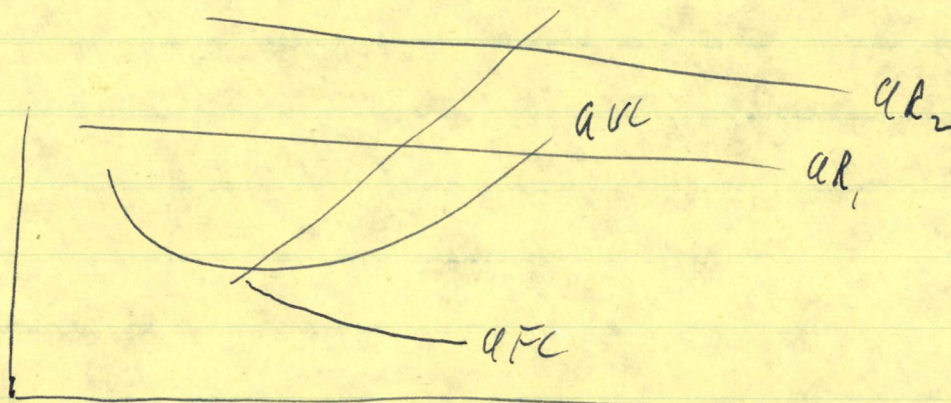
1. Impinging away

"Fat in the private sector". Land-fat. Surplus.

As demand rises, rent rises. "Demand-determined", is the conventional phrase, stemming from Ricardo.

But conventional wisdom is never as subtle as the original model being copied, and Ricardo had ~~the~~ rent affected by the character of supply, too. ~~The~~ Supply may be fixed, ~~but~~ geologically, but:

- It tapers off at varying rates. - Ricardo.
- Synergy brings out new potential - much of which lodges in rent.



3 effects of Δ demand.

- More rent from any given output.
- More output

- Intensive margin
- Extensive

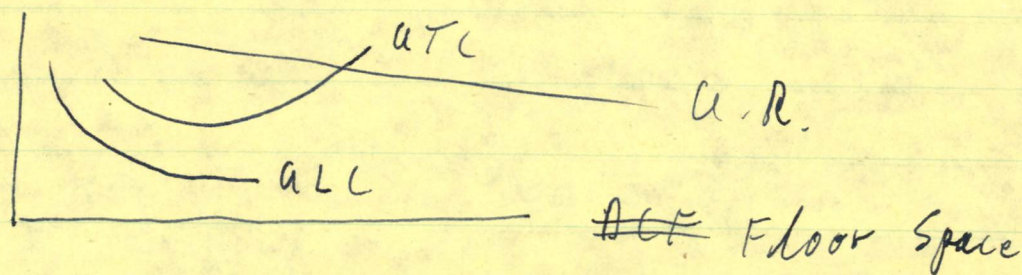
31.00

501 W. 1st St. Tucson 2
"All Makers" Will send battery pack.

✓ General failure to understand nature of rent.
Major failing of neo-classic ec.
E.g. why we will never solve farm problem
E.g. why court made L.A. Metro pay for ~~its~~
~~over~~ the very A.L.V. that it's own "coming event" shadow
cast before it.
E.g. of B.R. anti-spec. law.
E.g. of why rent control laws can survive, at
least for a long time.

Units of measurement.
"Non-land inputs, package of" is awkward +
unfamiliar.

What the world does is use DCF to measure
output, and K to measure input.



AFC is ave. Land cost.

AVC is ave. K cost.

AR is C.F. Thus, expenses are handled by deducting
them from rev.

The time period can be handled 3 ways.

1. DCF on Rev. Side, for A.R.

L/DCF for AFC

K/DCF for AVC

2. Annualize each of above by IPF. Flow basis.

3. Indiv. yrs.

(2) is most general, & is preferred.

✓ "Public Value" of Land. 3 sources

Does rent drive out business? Joe's Restaurant.

Rent vs. profit.

Rent is measure of net social benefit.

✓ Rent at urban fringe. Rationale for prior claim of higher use.

Pvt. rent vs. social rent. When infra-structure is subsidized, pvt. rent higher in the area subsidized. That is generally true in developing areas, where politically powerful people hold land.
Virgin Soil.

✓ Rent & Replacement. This is lost.

Rent + Value

$$\begin{array}{c}
 \text{Costs} \\
 \hline
 GR - C - (D + \text{Int.}) = \text{Rent} \\
 \hline
 \underbrace{\quad}_{C.F.} \quad \underbrace{\quad}_{\text{Amu.}}
 \end{array}$$

$$\therefore CF - \text{Amu.} = \text{Rent}$$

Appraisers are concerned w. rent, not profit.
 Rent is in rem, objective.

✓ Quiz: What is relationship among
 CF, Am-u & Rent?

Uses of rent:

Appraisal - how much to pay

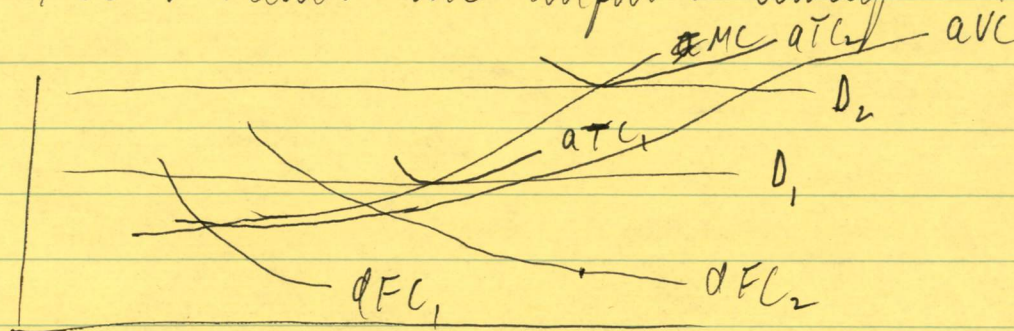
Renewal - end of life

Expansion - how much land

Tues

Rent is cause; price is effect.

Rent does not make supply; just allocates. "Made land" is not new land, but reallocated - taken from "water-lots".
Excess returns are imputed away - Triffin



Graph above shows how rent is imputed into FC.
Does not show Q of rent.

For showing Q of rent, use graph from last Thurs.

Note leverage on rent, from cost of bldg.

Note rent varies inversely w. int., hence w. input. return to K.

Note double effect on price of land.

a) Lower $GR = CF - K(i+d)$

b) ~~Lower~~ Lower $V/GR = \frac{1}{i}$

2

Mkt. failure.

Diff. carrying costs, $= \cancel{H \cdot QA} V \times IIR$

Other factors in syn. city

~~Go~~

Stickiness

assembly

advance purchase

Killers of the dream

Wed. Jan. 20, '82

Urban ec.

Unfair bias. Intro

A. "Govt Failure"

1. Taxes, vary w. use (or vary w. owner.)
2. X-subsidy. Free rides, in cost areas.
3. Allow poll.

B. Mkt. failure. a "fair mkt." is better than just "free". ~~as~~ Front-money bias.

1. Timing, ripeness
2. Assembly, stickiness of Mkt.
Much land tied up for yrs. w. dummy buyers.

C. Killers of the Dream

1. Pollution

~~Why~~ Open space no solutions. A cult. ^{Conventions v.} Allen-Bradley.
Individual perception + fallacy of comp.
No sub. for direct action vs. pollution.
Large vehicles as having divine rights.

Pollution is a form of congestion. When inter-site gets crowded, use mass transit.

2. X subsidy. Free rides

Some ex.

- Gas taxes.

- MWD
- Mke sewer
- Riv. wtr. zones.
- ported delivery.
- regulated utilities, keeping up rate base.

2 pattern:

Center sapped; fringes free-load
Hi. density sapped.

Logrolling.

MWD example - the Ontario - Panama

attack.

Basic cause: fed. subsidies etc. "French
equity"

Wed. 1/21/82

Urban Ecs.

Leeches, sappers, parasites

Garden 1. Pollution. Direct action needed.

.Chan 2. X-subsidy in mass systems

Dynamic aspect.

a. Lean Territory is promotional. They hope to make money there some day. They are capturing Territory.

Priv. businesses do some of the same. Their motives are weaker, but inc. tax helps. Inc. tax is 2d great distorter of locational choice in urban ecs.

Both factors work together for sprawl

b. Old area supplies K for new, various ways.

When public owns utility, rates on old system create K to expand. Forced saving on old ratepayers, to supply K for new.

Many do it w. internal funds.
Others use bonds.

Rev. bonds replacing g.o. bonds.

Gas tax hits city streets, to build outside,

Is there an end? Is rent fully
dissipated? Yes, electric utilities have hit the
wall.

In the east, it's "Crisis in Ruins"

This "Tragedy of Commons" is like "French
Equity".

Fed. Aid makes it worse?

Is there a solution? Change beneficiaries.

h. May 3.

Absentee ownership.

Curse of CBD. "Surplus in land invites inv. t." Unlabeled.

Dead Hands. Estates are empty land.

Udell, mergers in Wis.

Kahinok 4. Crowding the lot lines

Not always bad.

A-B vs. amenities

✓ Leapfrogging the main cause. Mixing incompatible uses. "Apt. Sprawl."

Zoning helps in theory but more often goes wrong + worsens whole system.

Fallen bldgs. are the answer. Energy crisis may lead us there.

Wednesday 5. Overloading public services.

Cars.

Many subsidies. "Appropriative capital".
Solution: tax cars. (Merton problem.)

Schools.

Solution. State support.

Cavanagh 6. Old bldgs. avoid new.
 Blighted land blights back.
 ✓ Wk. Bay solution.

~~Venturian~~ ^{Lee} 7. Holding land for future use.

Holcomb 8. Taxes + rev. sharing

Gaffney 9. Acquisition + alienation.

Venturian 10. Self-contained PUDs.

Urban Ecs., Wed., Jan. 16

4. Govt. Failure. City as a distorted price system.

Taxes

Internal circuit,

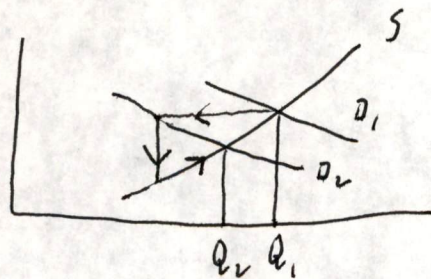
X - subsidy

allowing pollution

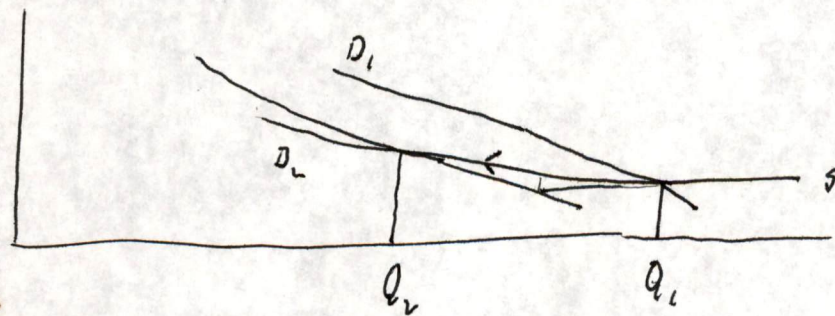
Front - money bias

"Fair Mkt." is one w/o any bias, priv. or public. Absence of price controls is not enough.

Ely rationalized w/ holding land from mkt. -
any gain served to offset any cost, however large.



Normal



Mass Transit

Summary of E.M. Hoover, Motor Metropolis

1. Other countries cities haven't exploded yet, like ours.
2. Equates our explosion with auto ownership. (Add, Interstate Highway program; Calif. freeways.)
Forgets earlier cycles, based on other transportation revolutions, e.g. from horse cars to electric.
3. Densities radically lowered. RPA wants 3m.a. more for NY by 1985.
4. Summaries
 - a. Search for quicker journey to work has been self-defeating.
 - b. Decay of mass transit has been cumulative, a case of positive feedback.
 - i. Show graphically. (Same time, show how mass transit can survive even when demand curve never touches AC curve. Case of Northfield, IL., taxing itself to attract Chicago El. Also, show how system can be disaggregated, to show when an extension is submarginal.)
 - ii. "Tyranny of small decisions."
Switching to autos is case where the whole is equal to less than the sum of its parts. That is negative synergy (same as diminishing returns, same as increasing costs).
 - c. Strangulation (another term for congestion, or increasing costs, or negative spillovers).
 - d. Alienation, between auto suburbs and city.
5. Non-coordination

Now consider:

1. Highway Planning. Meet demand. (Count Cads. twice)
2. Parking.
3. Transit. Min. subsidy.
 - a. Public
 - b. Pvt.

All policies wrong.

→ 1. Build to downtown. But demand is no guide when drivers don't pay costs.
\$4/day shd. be charged for pvt. car in Wash.

→ 2. Parking + freeways.
More bread, more butter, more bread, more butter, ...
Raise & index rates.

→ 3. Subsidy cost subsidy needed

Schechter, 1961.

Slow ec. growth.

ΔK out days.

cf. Ricardo

(1)

K used for sprawl } cannot be used for real growth. (novel idea in 1961) cf. MWD est. re Pen. Canal.

(2)

also, turns slowly - a frozen asset.
No fast payback required. Tch. pension funds.

(3)

"two mutually com." - e.g. of xptn; counted as ut. inc. Commuting, shopping, manufacturing - more travel.

(4)

Reverse commuting } Diverse points of empl. Need for cars. (Mostly w. one driver!)

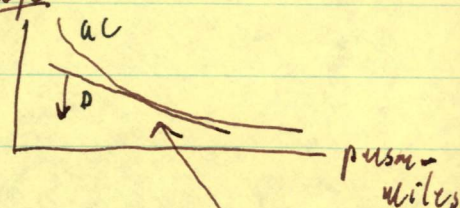
(5)

Blue collars commute out; white collars commute in.
X-hauling.

(6)

{ (also x-traffic.)
Beltways.

another usage



(7)

Failure to bridge Menom., beltway instead.

(8) Examples

1. Mass transit dies. 104 fares die. (Tipping pt. as dampers Δ s, status declines.) Suburban extensions also raise fares: more x-subsidy.

2. Small ^{town} water system, higher rates than large. Long lines also a factor. (Suburbs sponge on center - x-subsidy)

3. Gas.

Length of lines grew by higher % than
no. of customers.

(Line losses). (Friction losses - same as pumping
wtr. up hill)

4. Phones. Line extensions.

Real Rates rose, 1950-60

1935-39, they fell.

5. Power rates fell, but by less than they might
have.

6. Schools.

Small schools cost more to build p.s.f.

" " " " " " operate, per child.

(Conant)

7. Sewer.

He speaks of scale in plants, but
lines are very hi %.

\$4,000 / lot. Meguon, 1960.

(9)

Hints at constipation + derabibilizing of wtr.
Like old hoorn. Went w, union, shut him up.

Vickrey

Urban xpt.

1. 2 major aspects
 - a. No Peak pricing
 - b. Underpricing some modes relative to others.
2. Peak pricing
In other businesses is routine: resort hotels, veg. etc.

Why not xptn?

Historical cost pricing is one reason.

Perverse results

- a. Famous toll bridges, bond financed.
- b. Atk. pipeline. ICC regs.

Doing it right -- halfway.

Western water supply -- rightly free.

Good start -- but they got stuck, failed to evolve.
Now obsolete. "The old order changeth." Bk. of Common

Prayer.

To everything there is a reason



Use of coded stickers etc. now fairly common.
 I.C. S. Shore Rte, Chi. Wash, Metro

K-sub, B.C. Ferrier

3. City streets. ^{missile of ec. war.}
 No pricing at all. Tragedy of Commons.
 Gas tax est. $\frac{1}{3}$ cost of using city streets.
 (~~It~~ It was higher, then. Now, at $44/gal$,
 is lower 90, $\$4.4 B$ nationwide.)

(L.A. Times, 2/17/82, decay of various L.A. streets due to thru traffic A.)

Nowhere is there a systems analyst. Plan Comm. + Council approve new port. land uses w/o anticip. effect on insubstant sector. Not. Lumber.

You can put in widening wire, etc. + lower LRAC.
 But streets require land. That is an ultimate limit.)

Reforming bridge + tunnel tolls, good start on pricing streets.
 Purpose of toll is ~~not~~ hardly to finance the service; $\neq$ primarily to promote ec. in its use.

This also provides guide to deploying new cap.
 Hi toll + strong demand tells you when to expand cap.
 $\neq$ Bridge tolls don't force approaches, anyway.

Mass TransitCar

Peak

ok, ~~underpriced~~

Underpriced

Off/peak

O. priced

OK

✓ \$3,000 new car, used at peak in D.C., requires \$23,000
for wider streets: 8x as much.

Today, mult. wd. be higher, bcs. much higher
land costs.

Also today, longer trips. E.g. Columbia, Md.
Ideal city - once you get there. Highway costs more
than city.

Elaborate sci-fi schemes for scanners + cars.
(but grocery stores use them; rails have for years.)
But this is way ahead. Now, two prior approaches.

✓ 1. Parking.

- a. Meter more areas.
- b. Raise rates
- c. Invert rate structures off/street
- d. Restripe to favor smaller car.
- e. Accommodate bikes more.
- f. Prohibit parking in more areas.

- g. Multi-level structures
- h. Remove grandfather clause prote. from old bldgs.

2. Taxes.

- a. Cars, trucks, tax by
 - i. Space -- not value

b. Gas Tax.

- i. Higher
- ii. Stop earmarking.

3. Moving vehicles.

Where there is a queue, charge toll.
Peak times at major queues.

4. Provide mass Transit free, at center.

E.g. Boston vs. trucks

5. Limit perimeter. 25 mi. is plenty.

Put up barriers. Also to downtown.

1. Neutral Cont.

a. Main oppn. is political.

Some answers were T E

"Simple" A stall. Many things are complex.
"Fair"

b. E.g. of pol. pressure

1) Electr rates & density, around SF

2) Alliance of farmers & suburbs, ff. Baker v.

Cam. (replacing Farmer-Labor movement). Milw. sewers, etc.

3) B.C. Families

4) Riverside utilities

Powerful figure who threw extra-fair service to wife's clients. Beloit. Mayor's law partner

5) Rancho Calif. Highways & water

6) CWP & Puget. Canal.

Control of MWD

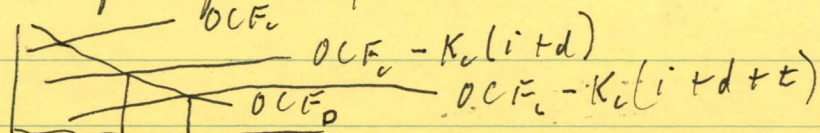
7) Milw. bus service

c. Utility rate base matters.

d. Utility rent-seeking
Absorbing REAs.

2. Positive continuum

a. Unbiased vertical xptn.

b. End bias ~~of~~ for old, vs. newc. Change deprec. rules, inc. tax
Stop redep. old bldgs.d. Overcome credit rationing.
See last page, Vol 1, BSome success stories: Sydney, J-hung, Taipei,
Hong Kong.

3. Regn,