

Ec 148 Old Notes

Syllabus, Ec. 148, W 98

- I. Generic Tools for analyzing ^{Land &} Res. Ecs
 II. Focus on Energy
 III. Focus on Water

Week	Day	Date	Topic
0	F	1/09	Intro. Statement of student interests
1	M	1/12	More detailed statement of " "
	W	14	Mineral leasing
	F	16	" "
2	M	19	No class
	W	21	Subsidies to energy
	F	23	" "
3	M	26	H & D Ch. 1: Concepts & Tools
	W	28	" "
	F	30	H & D Ch. 8: Depletion
4	M	2/02	" "
	W	4	M.S. ERT selection
	F	6	M.S. LevTex; Pseudo socialism;
5	M	9	Soil depn; Ark excerpts; Beaumont lease rules
	W	11	Psd Socm. IncTex
	F	13	Midterm
6	M	16	No class
	W	18	H & D Ch. 9, 10 Non competitive cases
	F	20	" "
7	M	23	Ch. 2 Sustainability
	W	25	Ch. 3 Land & Water
	F	27	M.S. I.D.s

8 M 3/2

W 4

F 6

9 M 9

W 11

F 13

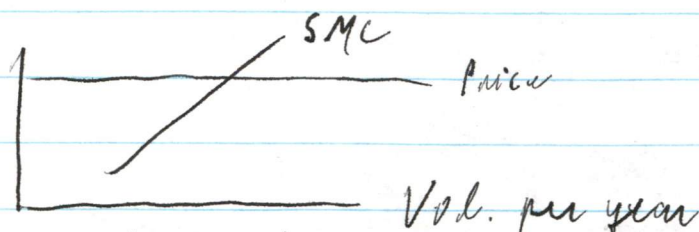
10 M 16

W 18

F 20

Wed, 18 Feb.

1. Diff. of mining costs & other costs: add deple. as a cost.



H+D do everything w. this model, where all costs are assignable to individual years.

2. Deple. = loss in value due to use.

a. Tube of toothpaste

b. Discount curve

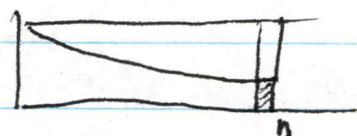


Fig. 1

$$\frac{a}{I^n}$$

c. Algebra

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$$\Delta BCF = a \frac{1 - I^{-(n-1)}}{i} - a \frac{1 - I^{-n}}{i}$$

$$= \frac{a}{i} [I^{-n} - I^{-(n-1)}] = \frac{a}{i} I^{-n} [1 - I] = \frac{a}{I^n}$$

3. Accelerating forces

a. Need to use it same day - no gain in never using, might as well destroy it.

b. Time value of money

c. Spacing the use of other, higher cost resources.

d. Lower future price

e. Higher future costs

f. Insecure future tenure, e.g. groundwater

g. Rent-seeking to firm up future tenure

h. ~~Get~~ Get use out of fixed K before it wears out, or depletes w. time



4. Decelerating forces

a. Rising SMC

Note dual meaning of dim. res (or increasing costs): i) Due to speed; ii) Due to exhaustion

b. Depletion

c. To offset (a), raise FC - but need to spread them over many years.

d. As you raise vol. p.a., bring end of life nearer to present (lower R/O, or Life Index).

In terms of Fig. 1, p. 1, the lower the Life Index (and

e. A firm that owns a lot may have a pos. depln. change near zero, while social change should be higher. An unsettled issue.

f. Higher future prices. ~~IF~~ (e.g. lifting price ceilings)

g. Lower "costs"

h. Rent-seeking by nominal activity.

"Due diligence"; "commercial prodn."

i. Tying up 200 m. acres w. pigmy efforts

5. Provision for future generations

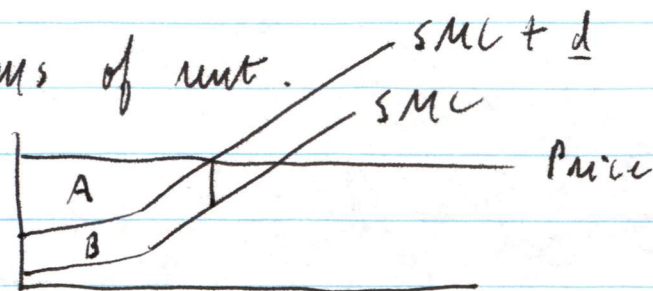
a. Let no one escape from a depln. charge

b. Note scissors effect of higher future price, & lower future costs. Concept of "crossing the equator."

If net rent rises at i or more, depln. charge $>$ current rent, do not produce

the less is the gain by shifting use to the present.

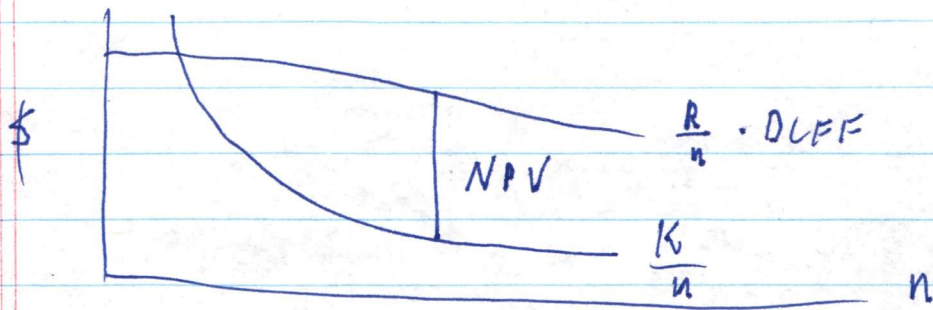
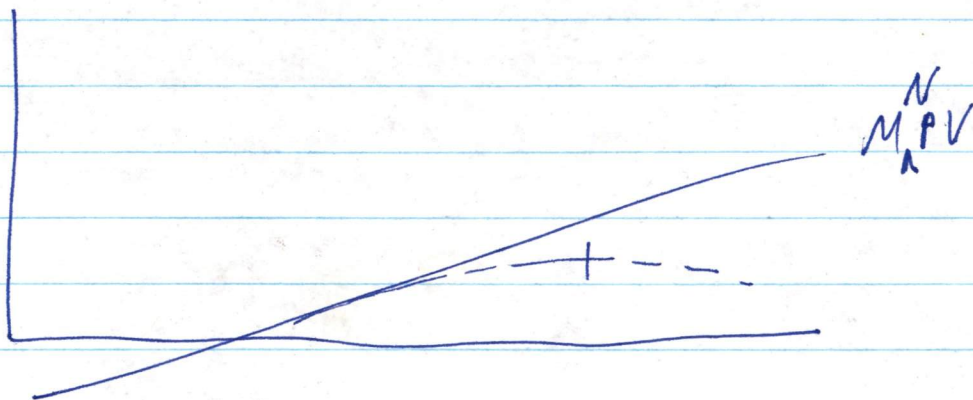
6. 2 forms of rent.



A is regular producer surplus

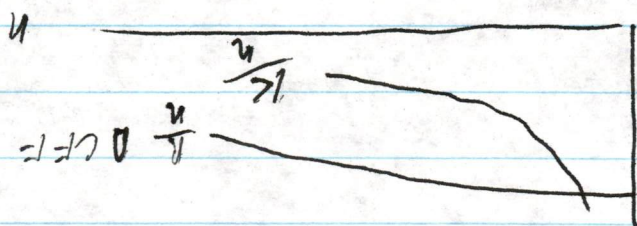
B is gain from extracting now rather than later.

7. Hi value of rent: LONs p.



Notes

1. $-\frac{n}{k} + \frac{n}{k} \text{ D.C.F.} =$



2. Value of $\frac{n}{k}$ $\left[\frac{n}{k} - \frac{n}{k} \right] = \frac{n}{k} \left[1 - \frac{n}{k} \right]$

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$\left[\frac{n}{k} - \frac{n}{k} \right] = \frac{n}{k} \left[1 - \frac{n}{k} \right]$

$\left(1 - \frac{n}{k} \right) \frac{n}{k} =$

$\frac{n}{k} - \frac{n^2}{k^2}$

3. When begin

H + D, Chap. 3. Pp. ~~71~~⁷⁴ ff. Water

1. Groundwater p. 76

a. If non-rechargeable is like a mine (except imports are possible)

b. Much is redundant, like early subways.

Lower table improved drainage.

c. Much is recharged, constantly.

d. Open access? No if you own 100,000 acs!

2. Surface water p. 76 ff.

a. Equivocal principle.

Violated by prior approp. (confused writings, p. 77)

" " fractional sharing, less so.

b. Peak & valley problems. p. 76 promises, but they don't deliver.

Apply simple universal model - 4 myths

1. Prop. rights, p. 77

2. Govt. control p. 78 is demon.

Striving for equity ("bleeding heart liberals")

3. Munic. utility pricing.

Criteria

Ex. of initial allow.

Constraints on mkt. use (response to shortage)

Flexibility

Cost. of service users

Distrib. equity

~~Active~~ Storage

Systems

Rip.

Approp. (Mormon + Gumbel)

Cooperative vts.

Mutual prescrip.

Internal, with dist.

Enterprise-bldg. (scattered lines + service users)

Mkt. pricing

a. Ex "load str." (FOB price)

b. of xptn.

H&O Ch. 3: Land & Water

1. pp. 57-75, Land & Water.
Basic good stuff.
2. p. 76 Pricing & use of water
3. They favor pricing.
 - a. It is more common than they say.
Every p.u. may do it, inside its system.
 - b. Doctrine of prior approp. p. 77
They are fuzzy on how these rts. make water use ineffic.

Drew matrix

Original basis

Construction or use

To enforceable: (place of use; purpose; pt. of diversion
duration

Access

Ec. 148 Mon. 16 March

Rationing inside utilities.

1. Job opps. forecasts. (Kolk, Brian Thomas)
Kolk: J. Wilson: F. Francis, Low & cos.

2. Utility is trustee for all owners.

3. Ration by area.

Areas differ in needs, & cost to serve.

Ration use of undersized disto. system.

4. Change price. Good, but

a. Postage stamp price

1. bad at best; worse if can expand area.

b. Mod. guide system expansion.

c. Error of over & underpricing.

Too hi - miss out on scale

Too low - ~~for~~ becomes a problem when

you meet Δ costs.

Typical lag in adjustments
thinkout.

d. Error of x-subsidy to biggest buyers.

i. Declining block rates.

ii. Stacking tends to "cost-justify"

- selecting hook up costs, ignoring traversal costs.

- ignoring ~~some~~ pooling effect of having many buyers; ignoring jobs, e.g. when Abnuee loses.

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5. Empire Mts.

Scattered service

X subsidy (exog. vs. endog. subsidies)

Need for pol. support

Pres. Council

"Regional equity", 1825-36

6. Mkt. price.

a. Wtr. at source.

Who wd. collect? State govt. Megabucks for
Negabucks.

b. Price vary by location of source.

c. " " " " pricing. Flexible.

d. Retain buyer pay for services - in studies
interest.

e. Charge for groundwater, too. Now a
leak in system.

Can use (export) anywhere

But rationalize, avoid X-handling.

7. Equity.

Mkt. system says wtr. is common, like air.
Current marketeers say otherwise.

"Conventional wisdom"

Don't worry, be happy, mkt. solves all problems.
Only problem is govt. reg.

1. Equity (fairness)

Never discuss interpersonal equity at home.
Only interunit. & what they call intergenerational.

Then, dodge concn. of indy, wealth, etc.

2. Need to change "processes & products." p. 31.
Covers a lot. Mkt. prices are powerful.

3. Strict sustainability is rigid. (cf. von Liebig.)
p. 32. Not to worry: to get there from here
we must be very flexible.
Also, turnover supplies flexibility. Growth
not needed.

4. Error, p. 32, saying v.a. after ~~price~~ by non-land
has risen. Table 2.2 is u.g.

5. Concept of asymptotic deple., p. 35
Flow lasts forever, in riv. stream - we
gradually adjust. No catastrophe.

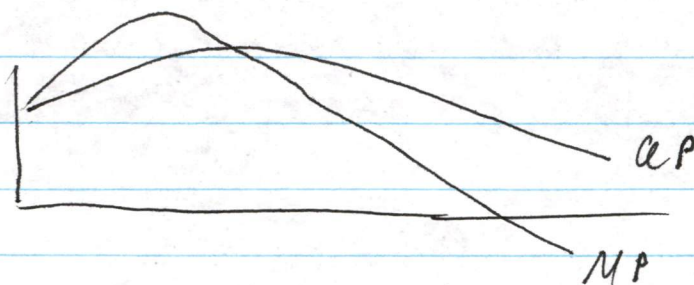
Ignores biology, catastrophes, compacting
aquifers - there are irreversible damages.

6. Cobb-Douglas fun.

a. Explaining it. Variables are U.C. letters.

b. ϵ of prodn.

c. $\frac{MP}{AP}$



d. Inversely related.

Fallacy in CDF is to keep them the same, as ratios change.

7. p. 35 Can convert natural $K_p^{(R)}$ to ~~the~~ man-made K , maintain "weak sustainability".
No sale!

E.g. boats are no sub. for fish.

Logging destroys spawning streams: so do dams.

E.g. K no sub. for oil - it uses oil.

Mills are no sub for timber.

8. Adjusting NIPA

Redefining Progress is pretty good. Cobb is good - did evs. thinking in Daly & Cobb

8. Problems w. NIPA

a. War emergency -

GNP looks depressed.

NI deducts deprec., but omits cap gains

Trasher growth

Recapture of excess deprec.

A l.v., some of which up a social

value.

New discoveries

abandonments

b. Modern reforms

add over the map, w. single minded
agendas.

They say ecological services not counted.
Wrong - they are part of rent.

They say household services not counted
disputed 1960's

Work at home is not

c. Subsidies ^{+ taxes} distort prices - but which way?

a. Farm subsidies - some Δ output;
some lower output

b. Energy subsidies lower mkt.
price - points missing from RFF, Chandler &
Morse. Big snafu job at RFF

(C & M also missed rise in field price,
remote areas, by using prices at central mkt.)

9. Value of deple.
 p. 37. Repetto says 4% off NNP in Indonesia.
 Trick of tricking.

cf. 4% to K form, and offsets it all.

But no allowance for loss of forest soils.

p. 38, It to seek to offset ^{red} oil deple. vs. rise of price. Not richer!

10. Are mining towns sustainable?

a. p. 40, It to in by saying no one study's city balance of power!

b. Some mining towns come & go.

Others come & stay. Spokane. Pittsburgh.

11. History - Mathews. Jewans (1865); B & M, 1963.

12. 4 ^(really 5) reasons minerals de over time, p. 42

a. Lower grade sources, in greater abundance
 (but at hi cost in energy & envt.)

b. Substitution (e.g. of fiber optics for copper wire)

c. Expln

d. Recycling

e. Tech. advances.

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13. The Simon-Ehrlich bet, 1982-91 or so.
Ehrlich did. We've looked at field prices at
subsides; & at labor-price.

14. Mors. scarcity, p 43-4. the base year
problem.

15. LR S & D are more elastic.
(But in some Long Long Run, S is inelastic. Hubbert peak.)

Talk to accompany notes on "What Price Water Marketing" L
3/16/98

1. ~~Most~~ wtr. is limitional p. 1. ^{is more good land than} there is wtr. to fructify.
2. Most wtr. goes to wrong places, & can't be moved. p. 1-2
3. Can multiply output by reallocating. ^{Neither is w. to S.}

a. Farm to city is not the whole story. p. 2
Interurban & interfarm, too.

Peak pricing, too, to sub. for storage

Locational pricing, too.

Continuous flexibility.

Other demands: fish, salinity, power ...

Major job of instn. - building, ^{using} ~~provided by~~

mkt. concepts but not blinded by them.

Is P.E. in best sense.

Got a start, 1920-50, but
was ^{stifled} ~~stifled~~ by McCarthyism ^(Dwight D. Eisenhower) ~~was~~ part of I-O, Govt. Reg.,
P.W. cos.

b. "Yield-enhancing subst." New concept? p. 2-3

No regions destroyed.

No stagnation.

Use fixed supply better.

4. ^{Mkts. the answer, but} ~~Worm~~ in the apple: "rent-seeking" - in this case, a general euphemism for land grabbing.

5. (a) Mkts. a pretext for extinguishing public rights
p. 4: From marketing to extinguishing public rts.

① Comm. of grants: App. I, p. 7 -
Some cases: Bass River; Mather's Strong; Newhall; Roswell; Chandler (Tucson)

$$x = \frac{\text{Value p.v. top bracket}}{\text{all brackets}} = .61 \text{ in } 1987$$

$$\frac{\$L+B \text{ top bracket}}{\text{all}} = .38, \quad 1987$$

$$\frac{\text{Irr. land in top bracket}}{\text{all}} = .34$$

→ Farms w. irr. land, GR = .82
All farms .76

$$\left\{ \begin{array}{l} \$L+B \text{ top bracket} \\ \$L+B \text{ all farms} \end{array} \right. = .24$$

(Better land, fewer bldgs)

alfalfa

~~alfalfa~~

$$\frac{\text{Irr. acres in top bracket}}{\text{all}} = .67$$

$$\frac{\text{Irr. acres all brackets}}{\text{all}} = .23$$

$$\frac{.67}{.23} = \text{Zeta} = 2.9 \text{ for alf.}$$

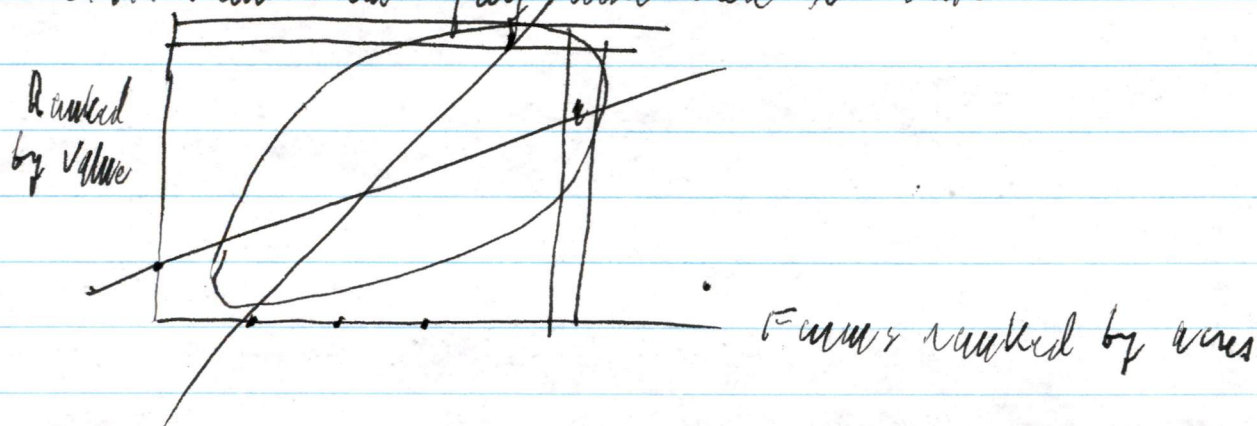
Other values, p. 10, u. 19

Westlands W. A. GR = .77 p. 11
all irr.

Conclusion: quantity & quality of land are probably more than adequate.

Why input? Constant efforts to trivialize low GR values by assuming large acreages mean poorer land.

Another device is regression fallacy. Statisticians' Mod. play, now used to this



6. Pvt. prop. in subsidies

Back to p. 5

Marketers w'd. vest both wtr. & subsidies

7. ~~Over~~ Use of Coase Theorem p. 5

8. Mkt. model not a perfect fit

A. Undermotivations of sellers

Not like bringing tomatoes to mkt. Not selling the flow of wtr, but the fountain itself. Also, precarious tenure.

B. Leaks in mkt.

1. Ground wtr.

2. Elevation

3. Effluents

4. Mkt. demands

Upstream, e.g. salinity.
Fishing,

{ WTA vs. WPP
Fallacy of disign.
of rent

5. Subsidizing w/ demands

C. Transition problems

1. Wtr. is public domain 488-89

2. Wtr "rights" are licenses. 489

(appurtenance, double talk)

3. Rent-seeking

9. Program p. 6