Macro Ideas

Econ 302
Study Questions

Final
Thurs., Jan. 19, '67

1. Why are micro-economic chokes not macro-economic chokes? Name five or more macro chokes, and explain each.

2. A farmer dismisses a hired hand and spends the same money for pesticide, herbicide, and triple superphosphate fertilizer, all of which he applies several times a year. Is he substituting capital for labor?

3. The farmer has been feeding broilers on wire in 13-week cycles. He lengthens the cycle to 18 weeks. What is he substituting for what? Explain.

4. Tight money hits some business and individuals harder than others. Why? Would it be better if the impact were more evenly spread?

5. In Wicksell's wine example (Lectures, p. 176) he shows that one years interest on four stocks of wine aged 0 to 3 years equals four years' interest on one stock of wine. Shoe his proof--or a better one.

How is the stock of wine at any time related to the period of investment? Compare your means of summing up the several stocks with a simple summation (like multiplying C_o x n). Why is yours better?

How does the period of investment affect the capital:output ratio? What do you mean by "output"--accrual of capital value or realization?

6. If t=1, Co=\$100, G_1=\$105, and S=0,

   a. What is the rate of return, r?
   b. How does a hike of wage rates by 1% affect r?
   c. If t=60, would the 1% wage hike affect r more or less or the same?
   d. From your answer to (c), infer how wage hikes generally affect the longevity of investments.

7. In (6), if S=\$100, what is r?
   What must G_1 become to maintain the same r?
   From your answer, infer how land value hikes affect the longevity of investments.

8. From your answer to (7), is the longevity of investments greater on marginal or superior land? How is capital longevity affected by the underuse of superior land and premature development of submarginal land? Distinguish longevity on a) ordinary private parcels; and b) "intersite" network rights of way (streets, utilities, etc.).

9. How do income taxes affect capital longevity?

10. How does the bias to longevity affect the distribution of income between labor and property?

11. An overcommitment of capital to long investments leads to a corrective rise of interest rates. Under what conditions can the corrective fail to correct and lead instead to a debacle?

12. The role of liquid capital is to "carry" the current output of labor, land, and frozen capital. As more capital is frozen, how does that affect the demand for liquid capital?

Relate your answer to the allegation that the curve of the marginal efficiency of capital is positively sloped.

13. In the presence of a large volume of half-finished projects, how might a capital shortage worsen itself?

14. Explain Dorfman's "bathtub theorem."

15. In what way may a long-term (say 30-year) mortgage loan be like a consumption loan?

a. If the house and lot depreciate faster than the loan is amortized.

b. If the house and lot value remain above the unpaid balance, but the house value depreciates faster than the loan is amortized.

16. How does the turnover of capital affect monetary and real income payments?

17. Under what conditions may slow turnover and replacement of capital constitute a macro-economic bottleneck?

18. In what ways is Faustmann's solution to the replacement problem superior to those of:

a. Fisher and Allen

b. Boulding

c. U. S. Forest Service

19. Expound each of the above four solutions:

a. Graphically

b. Marginally

c. As a maximizing solution

20. Show the effects on replacement frequency of taxes on:
    a. Wages
    b. Site rents
    c. Gross stumpage value
    d. Standing timber (ad valorem property tax)
    e. Net corporate income
        i. Costs expensed
        ii. Costs deducted in year of maturity
        iii. Costs prorated over life (an approximate answer will do)

21. How is the wages-fund theory modified and rescued by Wicksell's analysis of capital turnover?

22. Why might a drop of collateral values undercut the marginal efficiency of capital?

23. Why are zero rates of interest unthinkable?

24. How do monopolies act as macro-economic bottlenecks?
    Distinguish simple monopolies and cartels.

25. If excessive substitution of capital for labor is a concern, what can be done about it without forcing employers to "make work?"

26. If planned saving exceeds planned investment so that inventories pile up, what equilibrating adjustment can solve the problem without a cumulative decline in output and employment?

27. Why is the Fedebal Reserve Bank handcuffed and unable to lower interest rates very much by pllicies of "active ease?"

28. Why are Treasury deficits and surpluses now of limited macro-economic leverage?

29. If slow turnover of outstanding bank loans makes for a shortage of loanable funds, can the shortage be simply relieved by creating new money?

Macro - current issues.

1. Monetarists want Fed. to control M, regardless of i.

Keynesians want Fed. to use i as a tool.
- keep it stable, e.g.
- hold it down - how? a) By Fed rediscount and b) OMP, buying govt. bonds. Then govt. can use the $ for both direct spending, and underwriting pvt. ~~spending~~ inv., e.g. housing, Lockheed Chrysler.

2. Robt. Weintraub says:
Fed. has pursued stable i genuinely, rather than using 'stable' as euphemism for low.
In so doing, it has several times caused -ΔM. Before big recessions it has kept i high, even though demand had passed peak.
This drained reserves — i.e., banks paid off debts to Fed.

Now, if M grows but i stays high, there shd. be no collapse, but a re-allocn. of capl., into shorter forms, quicker.

3. Stable i are just another form of rigid price. Flexible i shd. serve us better.

4. Landmark events

1951 Tsy. stops supporting U.S. bonds.

'64. Tax cut

'71 $ float (monetarists approve.)

'79 Volcker revises i, sets it free.
New policy, conc. on bank reserves. Prior policy, stabilize fed. funds rate, daily basis.

5. Fed. states policy goals in terms of M_1 + M_2.
But it only directly controls monetary base, i.e. currency + bank reserves.

Now, when Fed. fails to meet a policy target, we do not know if the banks are unresponsive, or if the Fed. has changed policy.

Of course we can observe the monetary base. But when that strays from announced course, know one knows if this is a short term adj., or a new policy.

Fed. Meantime, has officially refused to state the new policy. Said "Don't scramble. Limits aren't clear yet."
Stability wd. be Ad if Fed. defined + announced its policies. — Bradford Cornell UCLA GSM

6. Housing has been the stabilizer.

In post 2 recessions, housing contd. for ½ of decline in GNP.

Not bcs. demand for credit changed, but supply. This is as it shd. be. (but note credit rationing serving in lieu of flexible i.)

But to stabilize hsg., we now have "savings certificates." There are a crisis tool for S+Ls. The S+Ls can use these to raise hi-cost money to keep going. Many are speculating that i will fall, so they might pay 12% short to lend (2% long. They have hi o'head fixed, want to keep busy.

(Here is a big vested int. in lower i. The fed. intermeds. who borrow short to lend long.)

Regardless of details, when you stabilize hsg. you require more extreme measures to accommodate to a shortfall of loanable funds. (more generally, of investible funds.)

7. Stable i does not result in stable flow of funds.

Credit rationing replaces i, if there is a shortage of loanable funds at fixed i.

Supply of flow is really the key.

Fed. cannot Δ flow by lowering i; but only by ΔM.

Slowdown in ΔM will slow down flow of loans, thus cause Δi.

Macro ideas.

1. German auto workers are paid 40% more than U.S.

2. U.S. auto indy. wasted away by substg annual styling changes for real improvements)
German + Jap. imports command premium bcs. of quality.

Cosmetic culture, just like FMP.

3. Ger. + Jap. exporters found their volume in global mkt. (metric!) while U.S. rested on domestic.

4. Largest corps. are most energy-intensive
31 of top 100 U.S. indl. cos.; V is related to use of their primary bus.
oil fueled vehicles: auto, trucks, tractors, oil, steel, rubber.

5. Directors are self-perpetuating. Propose their own reelection to votes, at co. expense. Mgmts. of top 100 have never lost the election of a single director.
New directors elected by CEO. (Like C of C.)
Incumbents' paradise.
Only qualification: loyalty to old boys club.

6. Discc. of scale. Small firms w. misused assets get raided. Giant firms are protected by sheer size.

There has been no takeover of top 100 for decades.

7. Early 1970s, formation of new firms, new ventures dropped nearly to zero!
Innovation goes w. new firms. So does empl., w. small new firms – + new firms are small.

8. Japan has aids to new firm formation.
They deliberately foster new firms w/. vested int. in older techniques. And in areas of low comptn.

9. Oil co. mgmt. All from same eng. school.
Grade depends on seniority. No new people allowed in. (They aren't expanding emplmt.)

Fast ec. growth results when ec. rent is up for grabs. Like an open commons.

That occurred in TXs. bcs. it fncd. govt. from oil taxes -- has no inc. tax + a low 4½% sales tax.

But now it is bursting. Houston hi vacancies.

3. Inflation + real i.r.

$$PV = \frac{a_1}{1+i} + \frac{a_2}{(1+i)^2} + \cdots + \frac{a_n}{(1+i)^n}$$

If a grows at g%

$$PV = \frac{a_0(1+g)^n}{(1+i)^n} \cong a_0(1+g-i)^n \cong \frac{a_0}{(1+i-g)^n}$$

Rule of thumb: real $i = \underline{i} = i - g$.

For more accuracy, $\frac{1}{1+\underline{i}} = \frac{1+g}{1+i}$

$$1+g+\underline{i}+\underline{i}g = 1+i$$

$$\underline{i}(1+g) = i - g$$

$$\underline{i} = \frac{i-g}{1+g}$$

$$1+\underline{i} = \frac{1+i}{1+g}$$

$$\underline{i} = \frac{1+i-1-g}{1+g} = \frac{i-g}{1+g}$$

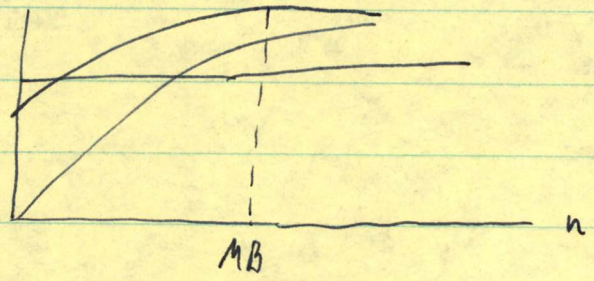
So rule of thumb overstates real i.r.
If $g = 100$%, this gets serious!

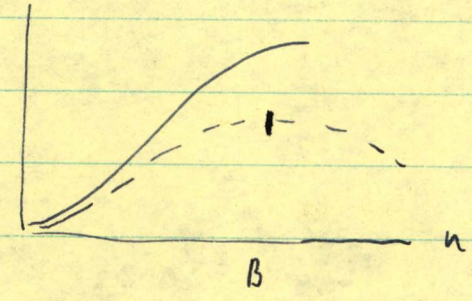
3a. Same rule for decaying income stream.

$$a_n = a_0(1-d)^n; \quad PV\,a_n = \frac{a_n}{(1+i+d)^n}$$

3b. Same for prop. tax

4. Reminder, Implicit + explicit variables.
a. "Cash Flow" is a ~~NP~~. Δ c.f. is a MNP. MP of land is net of K and Expenses.





B gives you right n for this tree; but maybe another tree wd. do better; or another use altogether.
Don't get in a rut. Consider all parameters as variables, ultimately.
Think in many dimensions.

5. Appraisal Rice

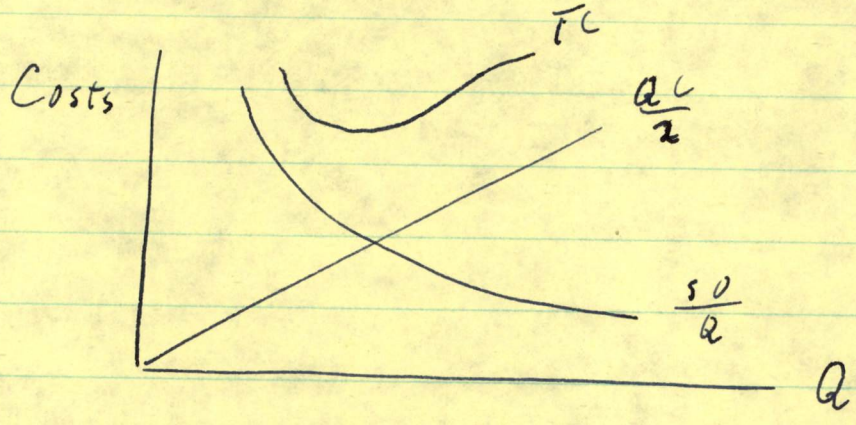
6. Rule 1: Your K is limited
conserve yr. K. (Don't exhaust yr. K)
revolving fund.
Synchronize ~~paybacks w. needs~~ (sources w. uses)
main source is payback; ∴ synch. payback w. uses
Cacots. receivable w. accts. payable

Ec. Order Quantity, E.O.Q. Use gasoline as the stock.

$$CC = \frac{Q}{2} \cdot C$$

$$\text{Ordering Costs} = \frac{S}{Q} \cdot O$$

$$TC = \frac{Q}{2} \cdot C + \frac{S}{Q} \cdot O$$



C = is car. cost in $ per gal. of mean inv. level per year
Time enters this model in that Q/2 is the steady level of inv. C is the cost per year.

O = ordering costs per order ... fixed regardless of Q.
This makes it so simple. Need to replace this assm. w. a quantity discount.

Get f. (requency) and p (eriod) in here.

$$TC = f \cdot O + \frac{X}{f}, \text{ where } X \text{ is stock carried when } f=1$$

$$= \frac{O}{p} + Xp$$

Storage vs. labor.

1. Changing babies
   Feeding babies

2. Delivering bottled water.

3. Perfect synch, zero inventory. New fad.

4. Paper towel roll, size of.

5. Store up value in longevity.
   Thick rugs.
   Hi thread counts.

6. Backpacking – size of load.
   Bigger load, fewer stops

7. Delivery to remote station.

8. Length of r.r. frt. trn.

9. Size of jet aircraft seating capacity.

10. Time in parking lot
    " " hospital

11. Hay fever shots
Once a week vs. 3 mos.

12. Buy-as-need vs. one-shot purchase.

13. Garbage pick-up vs. storage.

14. Freq. of doing dishes.

15. Size of log stack.

16. Length of mag. sub.

1 mo.	2.00	ΔQ	$\Delta Q/12$	$\frac{\Delta Q}{Q}$	ΔP	$\frac{\Delta P}{P}$	$\frac{\Delta PV}{PV}$
12 "	18.-	11	0.915	11	16	8	
24 "	30.	12	1.00	1.00	12	$\frac{2}{3}$	
60 "	60.-	36	3.	1.5	30	1	
120 "	100	60	5.	1.0	40	$\frac{2}{3}$	

Time-in-storage

Capital is value-in-storage. A lake or pool in a flowing stream.

But the stream flow in is not smooth. Neither is the outflow. They are out of synch. Storage provides the slack to get them in synch.

In some cases, opt. inflow is once in 80 years. E.g. a house.

Cap. is productive. Buy house, for 10 years' rent.

Take food. Need is steady.

a. Restaurants

b. Buy your own groceries. Now you are a capitalist. - a food capst.

c. Your backpack is heavy. Find a room.

d. Prepare your food, need a kitchen. But it, too, is stored-up value. Or land. Served by street improvements. But you rent. Food capitalism is enough at first.

e. How much to buy?

You buy a lot at once if:

Store is far away.

Quantity discounts are large.

Price is variable - shop the sales

Your space is cheap + ample.
The food won't spoil
You have the cash; or credit is cheap.
Your quality is reliable + your demand is to last.
You are a packrat
You dislike marketing, or have higher priorities.
You dislike interruptions
Your car is costly or balky.

$TC\ \#\ \text{per mo.} = \text{Usage}/f \times P + CC$

$$CC = \frac{U}{f}$$

$$TC = D \cdot f + S/f$$

D = Delivery cost
f = freq. / mo
S = Stock on hand if f = 1.