c16 Business cycles

See notes on Ethics "Ben. Cycles"
for theirs I want to expand at
Monticello.

Government's Credit at Stake

5-11-57

By DORIS FLEESON

WASHINGTON—The United States Treasury, the world's greatest borrower, has just had its hair curled by the bankers. The experience has so shaken Treasury officials that today they are reluctant to speak of it.

Without any question, the crisis at the Treasury is the most important story in Washington. It lacks personalities and its drama may be obvious only to the financial fraternity. Yet it will have a profound effect on everybody who owns a dollar or hopes to get one. The credit of the United States is clearly at stake.

Last week the Treasury sought to refund more than $4 billion in short term 1⅝ per cent notes. In exchange, it offered holders a choice of 11-month notes bearing 3½ per cent interest or notes maturing in four years and 10 months bearing 3⅝ per cent interest.

The interest offered was the highest on a Treasury security since the bank holiday 23 years ago. What happened to that offering was of immense importance, since in the next 12 months no less than $75 billion in short-term Treasury notes will come due and must be refinanced.

The Treasury, which ordinarily would reveal promptly the results of its offer, will say only that it suffered some "attrition." What this means is that some of the holders of the old notes decided not to accept either of the new Treasury issues but to demand cash instead.

It is suggested in financial circles that perhaps the holders of $1 billion in the maturing notes have requested cash redemption. If so, the issue was a failure, even at the greatly increased interest rate offered as a lure to buyers.

Another mark of failure would be a preference on the part of investors for the 10-month notes instead of the notes of longer term. It appears likely that this is what happened. If the Treasury has failed to persuade investors to accept notes of approximately five years' duration, it is highly unlikely that it could now sell bonds maturing in 10, 15 or 20 years, which it would certainly like to do.

What this means is that banks and financial institutions are now virtually the only source of Treasury funds except for purchases of bonds for the Social Security System which the government buys from itself. By withholding support from Treasury offerings such as was made last week, bankers can drive the interest ever higher, as they seem, in fact, to be doing.

There are rumors that the Treasury went into the market to support the price of the 1⅝ per cent notes during the redemption period. If so, this was a last-ditch tactic. The Federal Reserve System denies that it was responsible for the support buying which was obviously taking place.

The 1⅝ per cent notes were selling at a discount a week prior to their maturity. The 11-month, 3½ per cent issue offered in exchange is already selling at a discount on a when issued basis.

The Federal Reserve System, in asserting its independence of the Treasury, now stands aside and allows the prices of government bonds to go where the market will take them. Ours is probably the only Treasury in the world which does not have the support of its central banking system.

The Treasury now finds itself in the position of allowing the banks to set its rates, of being unable to sell long-term bonds without breaking the market for outstanding bonds, at a time when it must perform a refinancing job of almost incredible size. Robert Anderson, who is slated to succeed Treasury Secretary George M. Humphrey, faces a task of almost superhuman complexity.

Will they sell to banks & inflate? Or raise i? Probly latter.
What did they do in late '20s? If present trend is to shy away (over)

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offerings at the
9 from Graham
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$176,688 already
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n Page One.)

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Tie-In Sales.

The other bill which gained ap
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by magazine distributors in which
they are said to require outlets

and legal system can
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trial by jury."
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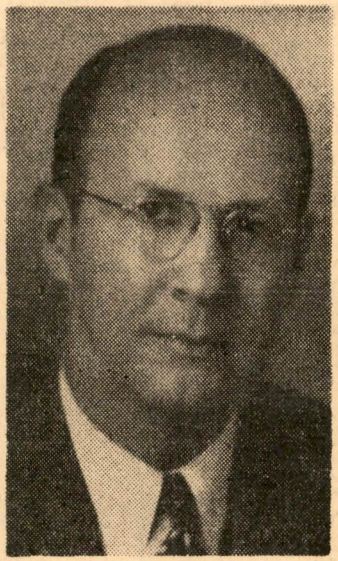
'is not unconstitu-

Dog Rescued

WILMINGTON, May 10 — The city street department succeeded this morning in freeing a dog which had been trapped in a storm sewer line at 13th and Dawson streets for the past three days.

An attempt yesterday to resuce the animal had failed although his barks could be heard near the storm drain openings.

Assisting the street department this morning was the dog's master. The boy was lowered into the sewer and managed to get the dog. Both were raised to the surface.



Dr. John Newton Thomas, dean of the Graduate School at Union Theological Seminary, Richmond, Va., who will be the speaker Monday night at 6:45 o'clock at Westminster Presbyterian Church when the Men's Dinner Meeting will be held. Dr. Thomas is a native of Virginia.

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by G

GOSSARD high-top
inches above the wais
line boning. Unique
elastic net frees your
sitting, bending. Sa
back panels. Side zip
Medium length. Wh

Boy

from long term commitments, they wd do better to sell short term notes

18D. ECONOMIC REPORT OF THE PRESIDENT TRANSMITTED TO THE CONGRESS, JANUARY 23, 1957. The report is presented in four chapters. Chapter 1, Opportunity and responsibility in a free economy; chapter 2, Economic growth and improvement, 1953–56; chapter 3, Economic developments in 1956; and chapter 4, Extending and broadening economic progress. 1957. 200 p. il.

65¢

Catalog No. Pr 34.10:957

port, export, and surplus removal, and applicable appropriations. 1957. 275 p.
Catalog No. A 1.76:113 70¢

3D. DO TRADING STAMPS AFFECT FOOD COSTS? Presents information relating to expansion and extent of use of trading stamps, plan of operation and influence on patronage, and costs and economic implications. The report seeks only to explain the basic

1. Importance of Depression

About the time most of you were born, U.S. lay in grip of most devastating paralysis of depression we had ever known.

13-15 m men — almost ~~½~~ 1 in 3 — cdn't find work.
Over half mortgage debt defaulted.
Cities & cties repudiated bonds
Bankrupts & suicides. Insull, Kreuger. Whitney
Gy, Hitler rose on it, put unemployed in army. Russia, they p+d. to no unempl., & made converts all over world. World ec. broke down. Clearly led to w.w.2
all in all, that depress. a dominant fact in shapg your lives.

Specter of that depression has haunted Am. & world thinkg ever since. Little dip in bus. indices enough to send pres. & cab. runng to medicine chest for cure-alls --- a const. threat to free ent.

So imp. to study.

2. Measure.

Production.
(not cons. - varies less - why?)

3. "Normality" - what is?

Nothing.

Not even "cycle". Always possible each ~~dec~~ boom is last one, & every bust. 20s, I. Fisher, Bogart. '30s,

Many convinced cap-m had come to end of rope. -- closed frontier, pop. growth slackens; inventions become capital saving, no more great inventions & new industries, ~~overcome~~ all inv. opp. saturated. — & simul, is high prop. to save.

Ec. maturity: Keynes, Hansen.

No inv. opp. So people hold assets in form of cash & land titles, instead of investing, hiring people to work.

Obviously untrue, from postwar boom. & insofar as true, can always Δ inv. opp. by lowering share of pie that others get — land, labor. Thus Δ inv. opp. Devise some graphical way to show this. Trad-nl dim. rets. obscures. a just single out investor as residual?

If have stagnation, is because of govt props & mnpy that prevent falling costs.

4. So important problem is ~~cycle~~ "fluctuation" -- wd. have that even if ec. free.

Imp. thing here is cumulative processes - ~~K & H right.~~ Have a group of other thinkers, tightrope walkers, get started wrong, start "vicious spiral". But int-g q. is, what makes spirals vicious. Argument w girl friend. Keep that in mind as study ~~cycles~~ "fluctuations", boom & bust.

5. What is a "bus. cycle" — adopt usual term, know limits now.

Production fluctuates.

Seasonal - really are rhythmical.

"Inventory cycles -- c. 3 yrs ave., but wide variations. Interesting, but 2 dary.

"Long Cycles" - dubious

Main interest is in really serious busts that have come just every 20 yrs or so, — with wide exceptions. Assoc. w. big land booms & construction & subdivn booms, & ~~cons~~ have produced reactions that really Lulus.

1819, '36, '51, '73, '93, saved by w.w.1, & 1929.

Go back farther, Eur., find tulip bubble; & 1720. & so, back w/o limit.

6. What happens in cycle?

Production of durable goods changes greatly - of others, less.

'29-32, 50% decline of prdctn. ~~Of particular~~ But perishables only 36% by $\frac{1}{3}$, consumer durables 62%, producer durables & residences 85%.

Tells us where to look: investment is what fluctuates. Expenditure on & production of durables.

Many divergent schools, but all stress that.

✓ 7. Reason inv. fluctuates so much more; ~~based on anticips.~~ low c.f.
a 10% Δ of gross rents may allow a 100% Δ in return to bldg.
The more durable, the more remote the antic.
acc. princ.
So you don't know for a long time if your inv. is profitable - - - can go on for yrs pouring M into bad invs, before becomes clear was all an error, costs too high relative to demand.
~~It~~ Conversely, can be inv. opp. w/o inv., bes not realized.

To new outline

✓ 8. Simplest to understand, inventory cycle. See those all time — small scale bus. cycles, rarely serious.

Enterprisers find need more inv., are losing M bcs invs too small, begin to stock up. ~~Pushes up costs~~ Puts M in circ., stimulates demand, ~~pushes up selling p~~ take invs off ~~but~~ enterprisers's hands, quick turnover, looks good. Stock up again, & this time begin to spec. in inventories — that Δs demand more than supply, pushes up selling p, encourages spec.s further.

You recognize condition we discussed before: tmg to Δ inv., can't do it.
✓ Simul, tm to reduce c.b., can't.

Investor's Margin

Key to cycles, is, more than any one thing, inv. opp.

That, combined with understandg of cumulative ΔV.

Inv. opp. mean gap between investor's costs & sellg p.

Much production requires little inv. – services, buy direct. For ec. activity there is only nec. that cost of service cheap enough so people buy. There, least inv.; & least variation.

Whole range of services, up to those requirg most inv: constn. Those ~~most vari~~ vary most.

What creates inv. opp.? Low costs, vs hi demand. Then investors pour M into new invs

That in turn stimulates demand. Which in turn makes inv. look even better – thus cumulates.

Desires of investors to create cap., not ultimately frustrated. But Sav. must Δ – which it will, as inc. does. But to Δ T by $10b, Δ Y by $30b

Note diff. of this description, & the "~~wage~~ cost-price spiral".

Latter says because costs rise, that Δs incomes, ~~for~~ cons. demand.

But if costs rise, tends to reduce spendg, by reducg inv. opp.

It is failure of costs to rise, that keep's investor's gap open.

End of boom never inevitable – human destiny is in human hands.

Yet ea. boom has ended. Bcs inv. opp. disappear. Why? Bcs costs rise, close gap. Bcs. oversupply builds up, investors h.o. awaiting lower costs ... or, as K. says, higher m.e.c. Mpies move in, ~~as~~ to even hi 'gaps' don't induce more inv-mt. And bcs. there is no inf. resr. of real capl. from which invmts. are made. Replacement slows down. Real T slow down, regardless of MV, & MV slows too, as M moves to less active accts. (opt.)

Note, K & H. give name to circ. process "Multiplier". OK

Rpt: Accumulation, followed by liquidation. In terms of Say's Law: Pd. when demand arises w/o any Δ supply; followed by pd when S does not create own demand.

Don't tell Say what: much sense. Gnrl overproduction impossible ☺, right in gnrl. But cyclically, exceptions.

Cycles, forecasting

1. Chaos of last depression

2. What is depression?

a) Production drops. (more than cons. Don't emphasize monetary inv. aspects here)

b) Departure from "normal"?

No norm.

Not even cycle. Haphazard fluctuations? Not quite that either, is some pattern & repetition & internal causation, endogenous development.

So say "cycle".

3. We are interested in cycles, not just static depression, but dynamic. movements.

~~Here we~~

Upswings & downswings, cumulative factors – snowballs, spirals.

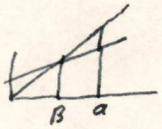
Turning points – why?

4. What is cycle?

Seasonal; inventory; Juglars, Kuznets. Kptn cycles.

1819, '36, '51, '73, '93, '29

5. What happens?

Prod-n fluctuates. 

Prod-n more than cons. i.e., inv.

'29-32, prod-n off 50%, perishables 36%, cons. durables 62%, producer durables & residences, 85-90%, (Kptn & land dev-mt, 99%)

6. Run thru inv-y cycle.

Accumulation & liquidation.

2 viewpts:

Trying to get rid of M — use cards

Trying to accumulate inv-y.

Thus move ~~to~~ from B to A. another view, ΔV.

Speculation jumps on bandwagon — & is unstable.

205. Boom & bust Cycles. Outline

1. Intro.
   History
   Description

2. Explanation, basic causes, simple
   a. ± Δ investor's gap -- opens & closes ... closes bec costs Δ ... we can't stand prosperity
      as it opens on inventories, leaves more for bldgs etc; & as closes, sht run. production keeps up, but is no quasi-rent for bldgs etc. So long run cap. is very variable.
      Other factors need inv. – can get it by sharing more w. investors
   b. Cumulative induced Δ ↑.
      Accumulation followed by liquidation

as costs rise, the rise encourages accum., inventory appreciate. But is limit

3. Aggravating factors
   a. ~~Spec's in inventories~~
      Induced inv. – need bigger inventories due to Δ Y
      Also due to complementarity ... e.g. new R.R. means much new opp. Or new cheap power.
      Also, as make more M on current inv., allows higher return to bldg; as make more on bldgs, allows more for land, get subdivn.
   b. P rigidities: pry open gap long way; then keep it closed a long time

Mon 8: Fri. 9

   ~~to Thurs~~
   c. Long gestation pd., durable cap. Δ cons. p.p. for cons. goods, but no more appear, push up p & cost. Induces more inv. in producing them. Also, room for long miscalc., lag in seeing ΔC, etc.
   d. Acc. princ.? Maybe
   e. New inventions
   f. ΔM, banks – unstable basis. Esp. f.
   g. Specs – in inventories e.g., antic. the Δ costs, or just riding a visible up draft. In urban subdivns – they are holding streets idle – causes great excess production. Cobweb

9 Sat.

   h. Δ l.v. & stock values, Δ liquidity, cap. gains income, → ΔV. Basis for borrowing → ΔM. Creates illusion of inv. opp. .... make gain from Δ l.v, think it is from inv. in bldg. Or, in stock mkt, makes people

Summary:

Is possible to avoid depression, w/o war, & w/o infl. Keep up inv. opp., ~~=~~ keep down P, ↑ stabilize/↑ main answers to overproduction bogey

So we need not fear production. Rather, devote ee. to trying to figure how to make the most from what we have - how best to allocate resources

By so doing, create inv. opps., end fear of overproduction. For by allocating resources better

buy new issues madly.

i. Mob psych., spec-n

~~j. Compl. new town towns enff to get n.r.~~

4. What ends it? Can't stand prosperity. Due to high antic. of future.

b. (ii) Δ Mnpy – chokes inv. opp. (i) Or just Δ cons. -farms.

8 Fri. a. Δ costs ... spec-n moves into non-reproduceables. Don't be deluded by price-cost spiralism.

Punctured illusions. End exploitation of investors

Hi inventories & holdings of bldgs, streets, etc.

Cumulative bank collapse.

Not inevitable. Keep down costs, keep up. p.p. Hoover conc. on the illusions.

Spirals, true & false. Essence is, false spiralists say low costs mean low inc. But they mean higher.

5. Recommend-ns: To keep free el.

Keep costs flexible ... thermostat. Always room for more

Anti-mnpy, unions. Chide theories of "2dry distrib."; from inv. from fmrs magic ↑ to trickle down.

speed land settlement after basic p.w. provided. Reduce the lag.

Control land spec-n ... but

control M supply.

Public inv. – is plenty of reed, & complements.

What ends it? Upper turning point.

1. Rising costs at first stimulate constn. in many ways. As antic. ΔP encourages spend'g M, so antic Δ costs encourages bld'g. But actual, realized higher costs stop it.

   another lap – dear land stimulates ~~bldg~~ xpty, land dev., but then Δ supply fails to encourage bld'g bec on fall'g mkt no one will build.

2. After so much cap. fmtn, annual amort-n Δs. a lig. trap. Requires more & more new inv. to offset.

   Inventories are replaced autom. But not white elephants.

   Debt makes it more definite

Thus presently build up too large inventories, many specs begin to sell to cash in, turn goods into cash. Then comes a pd. when supply does not create own demand — M spendg flowg into liquidity traps. Don't use it to hire men to work. Production falls until some of inventories "liquidated", pipelines cleared. can recommence.

There, simplest essence, is a bus. cycle. Nothing so serious, just a little flurry, all forgotten. Illustrates what happens on larger scale when investors go into more durables, & bank expension gets in picture.

9. Add complication: $\frac{\Delta V.}{\text{banks}}$ & ΔM

To expand inv.s, borrow, ΔM. Contract, v.v. Adds cumulative element.

10. Now see what happens when investors stock up on ~~Hsng~~ dur. durables. Remember, biggest fluctuations in producg them.

They like inventories: buy, to resell — not direct, but ec-ly. Truck, delivery ... ec-ly, sellg to customers.

always somewhat spec. When invest, only know how will do in early yrs --- tend to over emphasize evidence of early years. — ~~as~~ important.

During those early yrs of a construction boom, have several sources of income which are, in fact, only temporary. But few realize it. They ~~supply~~ create much of demand for housing – by renting, or perhaps buying.

Inc. from:

a. The investors themselves' spending on inv. at costs that will ultimately mean losses. Exploitation of investors. An income to recipients, & to donors no loss, until they find out.

b. Cap. gains, land & stock mkts.

c. Money inc. from ΔM

Thus encouraged, they build on beyond ultimate demand.

II. Beyond constr. boom & intimately assoc., is land boom, & ~~prema~~ subdivn boom.

Maddest, most fantastically extreme, of all.

Fla., L.I., Chic.

Subdivide & hold idle ... hence don't satisfy demand for urban land, encourages more subdiv. further out – not for sale to builders, but land spec.s.

Ultimate causes not clear? Remember, we focus on cumulative factors. Is always some original cause.

Bank credit based on it, balloons & bursts.

People employed bldg streets etc that prove worthless — but they get high incs for it, buy goods.

Immense cap. gains from lots. — buy goods.

Mult. lends self to wild abuses, if used carelessly. For yrs I wdn't use the word. But over time, criticism, distilled essence, good, imp. K & H good. What now call Mult. nothing new. Handy label for old phen., long described. But what's in name, I don't mind.

Old days, ΔV. Now, the mult. All same.

Good phen., circuit flow, it describes, basic to understanding boom & bust.

Run thru big one:

Δ inventories, run up.

Spec. in invs, " " more. Or, in frig, hold back cattle for breedg stock

Then, instead of turng down, note larger volume of bus., need more bldgs to house invs. So invest in them — ? ✗ costs low enough. ~~(Or, in case of frig, hold~~

When start on those durables, pay out incomes, but durables don't come on mkt right away. — long lag. Also, takes resources out of producg other goods, keeps up scarcity of them. ~~In frig, if Δ demand for beef, hold back~~ thus making investors produce ~~things to~~ durables to produce them.

Δ demand for finished products, but don't Δ supply right away. -- new factor, didn't have w. inventories.

Drive up P of final goods. Esp. durable goods, whose supply is mostly fixed, slow to change.

Gives illusion of great permanent demand for houses, etc. At higher P than mkt can permanently pay.

Construction boom. 10% Δ demand for houses requires 100% Δ production.

Add. acceleration: other ind.s, 10% Δ demand for final products calls for 100% Δ inv. in durable producer goods. -- maybe, if no excess capacity, & costs low enough, & mnpy doesn't block it.

Add that new houses call for new lots, call for new subdivns, new streets, etc. Add spec'n in lots, causg to produce vast excess of streets etc. --- most extreme.

Add ΔM. Esp. extreme when land gets into boom. "Liquid", banks lend on it, to buy it. Sellers spend cap gains inc. for cons. goods, or anything, Δs demand --- & puts banks out on limb.

Add mob psych. K&H good. - thin ice. (Speakg of which, some of you students...

Spec. gains, signal to others, amateurs move into mkts, buy anything,

Add new inventions:
Backlog built up in previous dead pd.

Add Δ pop. .. demand for houses.

Add complementarity. ... all ec. activity makes other activity more profitable, up to a pt. E.g., suppose town booms, enuff to justify s.t. — then opens new opp., others can use s.t., build new businesses.

If ever wonder why ec.sts hesitate when someone asks

when is next depress. comig, that list gives clue.

Infinitely complex. So many unpredictable vbles --- political maneuvers, wars, weather, etc. Don't expect good predictions from ec.sts.

Those most concerned w predict'g base predictions mainly on 1 element: mob psych. Main thing ~~[illegible]~~ how good bus. is, sht run, is how good investors think bus. will be. Bes inv.'s gap is between costs & ~~not~~ rec. current p, but antic. future p.

Successful spec. outguesses mob. & what is mob try'g to do? Outguess mob. Success to him w ho guess what mob will guess mob will guess mob will guess - - - - (Not all, big part)

Don't expect 100% predictions from anyone. Best sht run. from those in mkt, close to heart, pop. psych.

Ec-sts good for something else: recommend what to do.

Govt: Keep M stable
Keep P flexible, & costs. — costs ↑, to choke inv. boom; & fall, to end bust. Automatic regulator.
Control land booms, excess subdivn.
Avoid taxes & restrictions & mnpy that choke inv. opp.

Some say is only room for so much inv. -- to have new recovery, must wait until old cap. worn out. Malarkey. Static concept --- idea that our great productive power a curse, not a blessg. Are plenty of things we need --- smog control, hi-ways, housg, flood control, irrig. --- develop substs for disappearg nat. res.s, etc. Besides regular things -- more factories, schools, ..etc.. no end. Cheap power. (Hell's Canyon) & then that makes more things ec. we thought we cdn't afford.

H/v't yet said why big boom stops.

Small boom, was that rate of inv. went back to original level; (or, people stopped tng to $-\Delta$ c.b., & V fell.) Then cumulated.

Large boom, same: inv. opp. dry up. Not bcs saturated, wants all satisfied. But costs rise.

E.g. – what happens to constn. Unions fix hi wage scale, exclude non-union, push up wage.

Materials rise -- as spec., e.g. spec. timber holders, get to think's better to hold to future.

Taxes on new bldgs rise

Vacant lot ps rise.

E.g. slum areas, land p chronically too hi to permit new bldg.

So it ceases to be profitable to invest in those high cost raw materials, put together, build house. -- wd sell at loss.

Chokes off inv. opp.

Maybe quite a pd when builders put up new houses at those hi costs thinking they can sell – then find out can't.

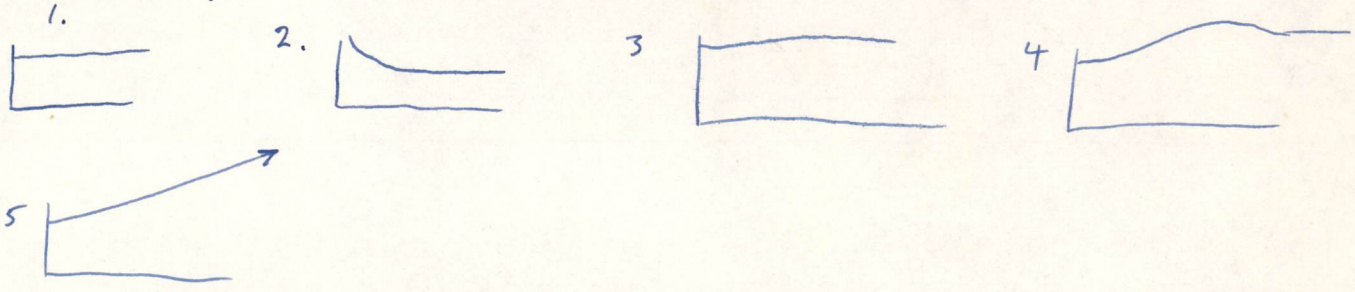
That scares investors -- squeezes out their profit.

& rigid costs don't fall fast enough to allow inv.'s profit. Gloom spreads, quickly industry halts.

When the mkt expected timber (wood on the hoof) prices to rise — stumpage, i.e., net after cutting costs — then buyers expect to hold longer. If wood is growing you hold for a time anyway. If price grows, due to Δ demand &/or lower costs, better xptn, etc, you plan to hold longer

~~Small~~ Medium op-r can set up mill, hold 10-20 yr supply, by which time mill worn out.

When Δ demand (& lower cost) hits, first effect probly Δ ~~—~~ cutting. But soon psych. changes, & antic. of higher p rolls like wave into future. Spec.s bid for timber to hold. They refuse to cut unless hi p., so current p advances. They hold large blocks off mkt, pushing up p, giving substance to antic. of Δ demand, enhancing expectations further.



So first result is faster cutting. But then antic develops of timber shortage. Timber, inframarg., is held back for a rise. Predictions of timber famine fill the air, conservationist sermons come faster.

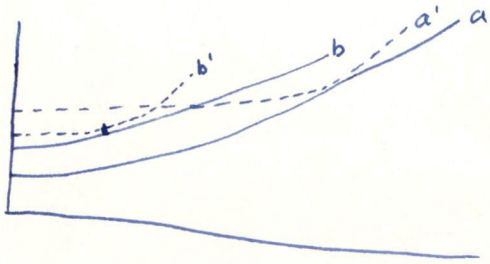
Weak holders who wd. hv. cut now sell to strong hands

These 'weak' holders can cut today at lower cost, & also cd cut in future for lower cost. As long as p to remain const., they can buy up timber as fast as they need it. When rise expected, stumpage spec. puts higher present value on some of it than gyppo can. The greater the expect-n of rise, the slower is cutt'g, & the more conc. timber.

Hi stumpage p encourages open'g new areas, develop'g subs, etc.

Finally, demand slacks off. Constr. has become hi cost from all sides – all materials hv. gone up, like lumber, so hv sites, labor. Credit stops.

Demand slacks off. But expect-ns, once raised, don't drop quickly. Timber is in strong hands, opt. & well-financed. So are other raw materials, & sites. No one of these, alone, can revive constr. much by fall'g, anyway. All must. Sales stop. Now a wave of pessimism rolls into future, gradually deflat'g prices until can make new start. as future antic. subside, p of timber falls, & returns to weak hands of those who value it for what will bring in near future. – the operating co.s.



a & b represent growth antic. of 2 holders, a is lo i.r. & hi cost.
a' & b' " ~~opt~~ max. values ea. can put on tree

Thus a outbids b when antic. of future rise. Timber moves into strong hands.

Prelim. to above: When rate of growth of timber p exceeds i, (g > i) won't cut. For individ. (This is oversimplified, omits annual costs e.g. land)

For students, timber makes a harder illustr-n than sites. Sites yield steady income. When inc. hi rel. to p, buyer gets his M back quickly.

Or, when future antic. hi, they contribute relatively more to p, & lo i.r. relative advantage Δs.

Demonstrate a principle algebraically, graphically, & verbally, & numerically.

The principle: When risk of p of land a timber expected, it moves to lo i.r. bidder more than before. Show how this encourages corp. mergers.

I. Timber

a. algebraically.

$P = \frac{T}{(1+i)^n}$ By binomial th., $(1+i)(1+i) = 1 + 2i + i^2$

$(1+i)^3 = 1 + 2i + i^2 + i + 2i^2 + i^3 = 1 + 3i + 3i^2 + i^3$

$(1+i)^4 = 1 + 4i + 6i^2 + 4i^3 + i^4$

Σ of geom. series is $S = a + ar + \dots ar^{n-1}$

$rS = ar + \dots ar^{n-1} + ar^n$

$S - rS = a - ar^n$

$S = \frac{a - ar^n}{1-r} = a\frac{1-r^n}{1-r}$

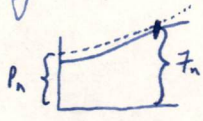
Very roughly, all but ~~the~~ 2 first terms of this binomial expansion are negligible

$1+i = 1+i$

$(1+i)^2 = 1 + 2i - -$

$(1+i)^n = 1 + ni \dots$ as n gets larger, i becomes more important (when add rest of terms this becomes more true even) (the later terms rep. compound int; $1+ni$ is just simple int.) (so they are more than negligible)

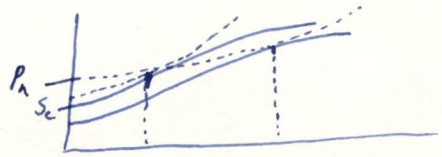
When ΔP antic., anyone to whom ~~Pn~~ $\frac{T_n}{(1+i)^n}$ > current stumpage will hold. & any logger will make more by sellg to such a one than by cuttg.



as long as rate of growth of T exceeds i, for some-one, he'll pay more today than current stumpage.

Now why does it matter how far in future best yr is? As long as it is some yrs in future, lo i.r. prevails. It matters bcs T_n differs among individs. Strong fnce co. may figure lower T_n, bcs further from its mill, bcs staff already overemployed, but expand

out anyway, to buy up timber for which they antic. lower P_n, bcs they disc. at lower i.



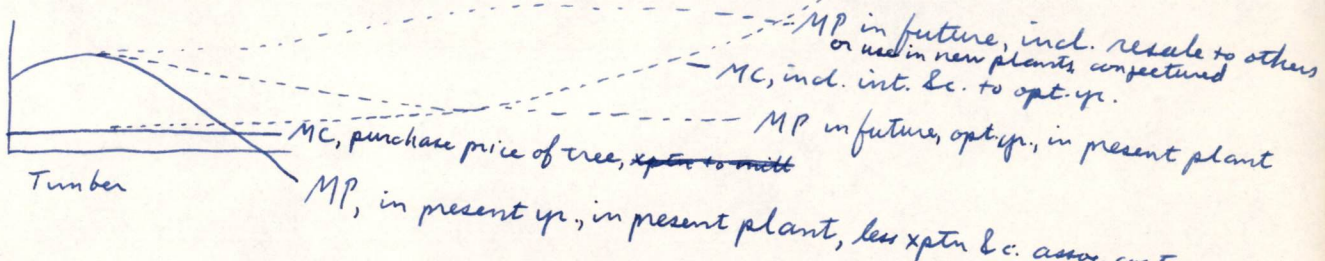
If antic. were lower than shown on graph, P_n wd fall, below S_c (stumpage, current); & before that, below other dotted line, & timber wd. move back to weaker fmed, for quicker cuttg.

Graph reps. a tree near the weak mill, which lacks for good wood, & far from strong, oversupplied mill. (which only handles big, perfect logs, & cuts fast w. big ~~bite~~ bite, etc. Thus wastes much). Shows how strong co. expands into such lands.

also has oversupply, so buys wood for 40 yrs hence from weak mill that wd use it in 20 yrs:

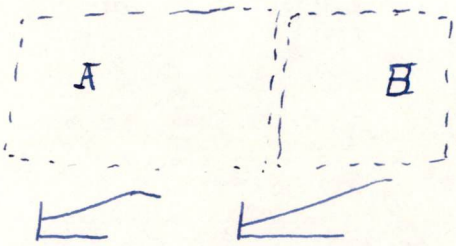
Now try to make a dim. ret. graph of this, as did for land.

prelim., rough



Co. expands to MC = MP, so when future looms up, lo i.r. expands. This pushes up p of stumpage, hi i.r. contracts.

For students, begin w. simple idea. Say opt. yr of cutting moves to future (as tho same for everyone). Then lo i expands. Use $\frac{7}{1+ni...}$ as simple illustr.



Graph refers to tract of timber closer to B than A, which B wd hold if just for present use, lower xptn costs.

As opt. yr of cutting moves future, A expands, finally takes over B. Bcs $\frac{7}{1+ni...}$ puts more imptnce on i as n grows larger.
Now the 2 together have lower i, move out l clevon more.

II Land.

$V = \frac{a}{i} + \frac{\Delta a}{i^2}$. When ~~Lorem~~ Δa rises, infl. of i Δs.

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

$V = \frac{a_1}{1+i} + \frac{a_2}{(1+i)^2} \cdots + \frac{a_n}{(1+i)^n} \cdots + \frac{a_\infty}{(1+i)^\infty}$. i is more imptnt in future yrs.

Verbally: Poor buyer must borrow at hi rate, pay int. from earnings, & pay off loan in 5 yrs. Can't put much value on remote future.

Numerically: give figures from fnce tables.

(Term of loan)

III. Stocks

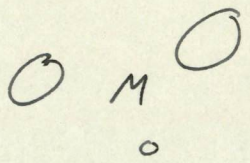
Larger corp. can buy assets of smaller, when future higher.

Easier than buyg title to assets is buy the smaller corp. They can pay more for its shares than its holders think they are worth, a, bes of lower i.r. b, bes by enlargg, they enhance value of their own stock.

Or they merge, issue new shares, which mkt pays more for. This benefits shareholders. Also lets, bankers (promoters,) give selves some shares for services, no one notices. or minds so much, since shares go up.

Mergers are difficult — must determine what shares are worth in terms of ea. other, decide who is to be boss, etc. So when mkt lo, not worth effort. But when hi, well worth it, more often.

For my class, I drew 3 circle s, representing output of different industries: ag, mfr., retail. Let them all grow together, no change of relative prices. But let them grow disprop., the growers lose prices. And let one of them stop, the others are hurt. Depression comes when one of them starts to shrink. The big shrinkers are the capital intensive production -- not that which uses existing capital, but that which creates capital goods -- houses, utilities, etc. But this is too simple -- in barter terms, depression comes because supply of houses etc. coming on mkt. falls. But it happens, rather, on money end: the money which producrs of cap. goods would have spent falls. Banks ruined. Disorganization. Barriers to entering other industries. That is depression.



Qns for students from Beach

p. 192 Explain constr. of deviation from trend curve.

194 What fluctuates most

195 Constr. cycle is major one.

196-7 Describe various theories.

Mon: ~~Finish~~ Begin acc. princ.

B&C

PART III

Income, Unemployment, & Inflation

Chap. 8: & Instability

(That isn't quite the right word. It's periods of stagnation, disorganization, lack of opp., waste of resources, unemployment .... whether constant or "unstable". China had "stability".)

Depression vs inflation (but they can go together)

(Movement of goods det. by movement of inv. ... in money. Flow of gross inv. key.)

Production fell; he ests. in '30s it cd. have bn ⅓ higher than was, given full empl.

(N.I. doubtless fell more than output, as cap gains changed to losses, etc)

Losses unevenly spread, so some hit awfully hard.

The unemployed, esp. in certain industries (durables)

Farmers, esp. w. debts (how about corp. debtors ... i.e. stockholders in "leverage" corps)

Bus. debtors

(Munic. taxpayers?)

Some creditors

Total nat. wealth less than wd. have bn.

Shifted from debtors to creditors. (Not nec. from poor to rich)

Cycles.

Not rhythmic, as K & H say.

Fluctuations better

Outline general course

Must explain Start, upswing, upper turning pt, downswing.

Can't explain in detail something so complex, few min. But imp. basic factors.

Begins when P low enough to let it. ΔMV, Δ inv. opp.

Upswing, cumulative. Inv. opp $\rightarrow \Delta M \rightarrow \Delta V$, etc.

Top, ΔP. esp., spec., M drained into it, not available to finance xactions. Land boom, stock boom. Decline of comm. loan.

Hi costs choke off inv. opp.

Land & stock collapse, $-\Delta M$, $-\Delta V$

Downswing,

MV falls.

P fall, not fast enough. Some even rise -- n.r. rates,

$-\Delta$ inv. opp., $\rightarrow -\Delta$ i.r., $\rightarrow \Delta P$ land, timber. $P = \frac{a}{i.r.}$

Throw inv. on mkt for cash, supply doesn't create demand.

1. Acceleration: people build in antic., from current Δ demand.

2. Multiplier: / most basic. To understand, note first, most c.b. held by businessmen. Think of 2 pools of cash, big & small, vble & dependent.
Δ I does not come from −Δ C, but is net new spend'g. If new spend'g of some ... enterprisers Δ ĝ stocks ... not offset by new sav'g of others, circular flow of M is faster, until new sav. does offset -- effect of ΔP or ΔT.

Recognize this as try'g to −Δ c.b. ---- same as try'g to Δ other assets (for one does not try to −Δ c.b. by throw'g M away).

Can't −Δ c.b. bcs M comes back faster when spend faster.

Same idea, other view: can't Δ inventories, ~~[illegible]~~ enterprisers in gnrl, if try'g to do so makes customers buy faster.

So M turnover – hence M incomes – increase faster & faster until someone willing to hold the M.

Thus, on basis of desires to Δ inventory, get a cumulative Δ spending.

Then, after rate of investment higher for a while, fill up inventories. Then, say enterprisers, ~~[illegible]~~ & specs, have filled up inventories, are ready to reduce rate of inv. to former level.

They −Δ spend'g. But that reduces incomes, & cons., so they fail to reduce inventories. & so on, until −ΔP & −ΔT, or Δ inv. opp. stop decrease.

Cycle.

Top: inv. opp. choke off. M goes into spec., chokes off more, cumulates – for a while, causes premature subdiv'n, then that, too, collapses.

—

Boom: accumulating cap., speculatively, overdo it, basis of current P.

Bust: living off cap. Convert'g assets to cash, dump'g goods for it, as credit dries up. That lowers selling p w/o lower'g cost, reduces investor's spread.

—

Construction cycle, most extreme. (& subdiv'n) Revolves around behavior of land P.

—

Effect of war: lower mnpy restrictions. Open up unions. New alum. cos. P. controls on mnpsts. Patents shared. Δ postwar inv.

Infl., pay debts, makes better inv. opp., borrowers free of debt.

Smallest is inventory boom-bust.

Big is constr., & land subdiv. – then, munic. bonds based, not on just spec. in cap., but in land the cap. is supposed to fructify. No limit. Biggest booms. Spec. holds P too hi, get too much.

Start with Δ's inventories. Add cumulative factors: banks, trade terms. 1819, 1836, 1857, '73, '93, 1929 the same: ~~open~~ bank M based on spec. l.v. brought crash.

Policy of –ΔP in depress. – good, from 1 view. But doubles debt burdens. Bankrupts. Destroys M. So once your in such a mess, M based on spec. l.v., no easy way out. Moral: don't do it again.

Boom, mergers, mnpies, holdup p, stir up excess pdctn for bust.

—

Top of boom.

I.R. very hi to borrowers, risk Δs, M pours into spec-n inequities.

To enterpriser, i.r. & raw mat very hi.

— Inv. based on anticipations. / produce for unknown mkt, days or yrs hence. Don't know for yrs if correct -- esp when spec-n makes seem correct when basic demand wdn't make so.

Boom often based on exploit'g investors — they allow hi returns to all others, prove ultimately to lose out. — then takes yrs to bring others down, even then hard to restore investor confidence.

(During dep., backlog of new inv-ns accumulates.)

The more durable the product, the more variation.

We are herd animals, many, great waves of mass madness, follow leaders, etc.

— All schools stress investment. One thing all have in common.

— Inv. set off like + thumb & fingers.

Inv. opp cumulative, as p.w. make new opp.

— wherever commercial- Ind. ec. taken over.

+list: Tulip bubble.

1720 Fr. Miss & Eng S. Sea bubbles.

U. S. 1819 etc.

Gold pdctn, psych, Pigou makes it whole story & inge Sunspot, ~~etc~~ birth rates, innovations, oversaving due to low wages, misinv. + that doesn't cause pdctn, banks + ~~etc~~ reaches res. limits, ↑ pd. of gestation

Forecast'g errors involved. Why can't ec. sts forecast, correct? Bes forecast'g is figur'g what others will forecast, ... a psych. problem of mob psych.

— Saturate inv. opp — not productively, but borrowers can't borrow more, must stop, may be repay some, + tho not rec. ΔM stops. Cd. level off but doesn't.