

Ec. 134, W85, old Notes.

Review

1. Finish tree.

a. Mgmt. condition. $F' = F^i + a$

$$= F^i + \frac{F^i}{I^q - 1} = F^i \left(\frac{I^q - 1 + 1}{I^q - 1} \right) = F \cdot IPF$$

b. also make a.

c. When $F = 0$, $F' = a$ (F' replaced by R_n)

d. Effect of taxes

Taxes not simple!

i. Prop. tax

Land

Bldg.

ii. Inc. Tax

Defender

Challenger

Tues, 1-8-85

2, Calc

3. Handouts :

Supplements
Problems

4. Exam, grading

5. Stickup w. text. Survey the course.

Ch. 1 Overview

a. Fung is raising & managing money

Micro taken it for ground - "add fertilizer"

Macro

Big gap in each one.

b. Most funds come from cash flow. I will emphasize.

c. P. focuses on firms, mainly corps.
I go wider.

d. Full, is most common route to top input.

2

1. Is better than "profit max". Longer view

2. Is too simple

A. Rival ideas

Max l. r. r.

Mac vo lurre

B. In dms. many prefer life cycle ending in tiger.

c. " " " civic contributions.

Udell study. Goldschmidt study.

Udell study. Goldschmidt study.
Pinches is almost a travesty of the
mkt. system, a Scrooge.

F. Pinches says ^{to} mat. value of common shares.
Too simple, but a good start.

3 element:

1. C. f.

(C.F. $\equiv$ "earnings". Might lead to some result, but earnings look back to hist. cost.)

Рв. - эк. - К - Т

Same as net product.

~~all~~ (MP is a net product)

2. Timing

3. Risk. Many issues, not covered,

- a. Int. Risk
- b. Lender's risk
- c. Risk-averse or risk-prefer.
- d. Active + passive risk
- e. Known variability vs. unknown,
- f. ~~Importance~~ ^{Difficulty} of distinguishing risk-seeking from opt. forecasting.
- g. Long + short term risk.

Punches o' looks all that, + more.

Assumes perfect mkt. + insts. Totally sold on mkt. — an ideological bias, "in" this yr. — beware.

Overall, his treatm. of risk is mediocre. ~~Relevance~~

Role of risk in P. is to rationalize diff. in cap. rate.

Valuation results from combining the 3 elements.

Ch. 2: The Fed. System

1. "Major sources of funding" 1982

	1. Ins. cos. + pension funds	\$1086
	2. Comm. Banks	96
Disintermediation →	3. Individuals. (e.g. me)	81
p. 19	4. "Inv. Cos." (mutual funds; ^(money mkt. mutual funds) _(are for new growth.)	52
	5. "Govt." (e.g. Alta. Heritage Fund)	34
	6. Foreign (e.g. Saudi Arabia)	27
	7. Thrift Institutions	19
	8. "Business"	11

2. 2 types of fed mkt.

1. Money mkt: short term

ex.

- Tsy bills
- Agency secs --- FNMMA, Int. Credit Bk, etc.
- CDs
- Commercial paper
- Banks' Acceptances (int. trade)
- "Euro dollars borrowings"

"various currencies"

Money mkt. grew tremendously, 1975 -
(fear of infln; then, hi i.r. Good thing!)

2. K mkt.

Stocks + bonds

(Shd. mention direct equities + mortgages)

3. ~~ff.~~ Primary + 2 day mkt.

2 day mkt. helps primary.
Also, ultimately determines who controls firm. E.g. oil mergers.

Scuff about ~~the~~ effci. of 2 day mkt. is not. They are everything but. Mergers occur to raise P by lowering cap. rate. P. is ff. the land into this year's fashions by talking of effci. mkt., p. 30.

For land, there never was a primary mkt. Rational is never to reduce supply: only to put to highest use.

Stock mkt. is even worse.
An "efficient" mkt. is one that allocates land to highest use, using common discount rate.

4. ~~ff.~~ Regn.

SEC (Ch. 17)

Many agencies
F R S tools.

- Res. requir.
- Open mkt
- Redisc. rate
- Selective controls (Comptroller of Currency also involved). These are dynamic

but invisible. They are being dynamically relaxed.
Thus letting banks into more cap. loans & more trouble.

— Tsy. shifting deposits from Fed. to country banks.

5. \$, p. 21, 2 mms.

6. ~~6.~~ Adjusting for infln.
 r = real rate
 i = nominal rate
 g = infln. rate

$$r = i - g$$

"Fisher Effect"

Actually, is only approximately true. Math. later.

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

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

is a way to observe

real i.r. It is higher than 2-3 % cited on p. 21, for investors in equities.

7. Errors, p. 33

8. Reciprocals, p. 33

9. 1971, end of fixed exchange rates
(1978, my escape from Canada)

10. p. 37 Stocks
Yield = $\frac{\text{Dividend}}{\text{Price}}$

$$P-E = \frac{\text{Price}}{\text{Earnings}}$$

What are the 2 differences?

P-E a.k.a. "year purchase"

11. p. 39 Bonds

a. Traded in 32nds.

$$92.24 \equiv 92 \text{ and } \frac{24}{32}$$

b. Cur. Yld. vs. YTM.

Ch. 3. Financial Analysis

1. ~~3~~ 3 kinds of fincl. statements
 1. GAAP. In Ann. Rpt.
 2. Tax
 3. Internal
Costing, xfr. pricing, etc.

Pin. focuses on GAAP (he says, but actually gets into taxes a lot.)

2. GAAP principles
 1. Accrual (not same as appreciation)
 2. Realize.
 3. Matching
 4. Hist. Cost.

Income Statement

1. Sales

S

Cost of Goods Sold

~~#~~ Direct Expenses

Depn. + Rent

E

D

~~E~~

CGS

GM

2. Gross Margin $GM = S - C$

Opg. Expenses

Selling, admin.

Other

Sg

OE

Opg E
OP

3. Opg. Profit $OP = GM - Opg E$

Adjustments

Discontinued Ops

Inc. from Subs.

DO

IS

~~EBIT~~

#

a

4. EBIT

$OP - a = EBIT$

EBIT

Interest

I

I

5. EBT

$EBIT - I =$

EBT

Inc. Taxes

~~EBT~~ ~~EBT~~

~~EBT~~ ~~IT~~

6. NI or EAT

$EBT - IT =$

~~EBT~~ ~~IT~~

[7. EPS

$EAT / Sh = EPS$]

Balance Sheet

Assets

Current Assets

Cash etc.	C
Accts receivable	AR
Inventories	I
	<hr/>
	CA

Fixed Assets

Gross "Prop. & Equipment"	P & E
<u>Less: Acc. Depr.</u>	
Net Prop. & Eq.	
Inv. in Subs	

TFA

TA

Total Assets

Liabilities

Current Liabs.

Accts. & Notes Payable	ANP
Accrued Expenses	AE
	<hr/>
	CL

Long Term Liabilities

Long Debt	LD
Lease Oblig.	LO
Deferred Taxes	DT
	<hr/>
	LTL

Liabilities (Cont.)

Stockholder's Equity

Pref.	P
Common	C
Added. paid-in K	A
Retained Earnings	R
	<hr/> SE

Total Liab. + SE

$$CL + LTL + SE = T LSE$$

- GAAP is a common language
FASB is arbiter.
- Accrual basis of income + cost. (Different from tax accts.)
Δ accts receivable are income
(Δ short debt is expense?)
- Accrual is from current ops.
Deprec. is not accrual
Realiz. by sale is required
- Deprec. is an expense
∴ "Capd." outlays are not expenses when made.
- On Inc. Statement, deduct costs in steps
On Balance Sheet, A + L are aggregated separately

Analyzing Statements

1. Compare to indy. + standards.
 For this, use "Common Size Statements"
 Divide cell ^{Ind. Statement} by Sales, go on % basis.
 (But beware of taking return on sales as a performance standard!)
- Divide Balance Sheet by TA
2. Trends over time
3. Pursue qns. raised by 1 + 2

E.g., P. of J.C. Penney vs. K-Mart + Fed-
 exated.

Shows that Penney ~~decreased~~ ^{lowered} invy., 1979-82,
 from 26.4% of sales to 24%.

But ~~decreased~~ raised Accs rec. from 16.9% to 26%.
 a switch of inv. strategy. (Smart! Higher i.v. + lower infn.)

(Note: As much cap. invd. in A.R. as in invies!)

Ratio Analysis

1. Liquidity
2. Asset Mgmt
3. Debt
4. Profitability
5. Market

1. Liquidity Ratios

$$a. \text{ Current Ratio} = \frac{\text{Current Ass.}}{\text{Liab.}}$$

2.0 is "par".

1.0 is Trouble

$$b. \text{ Quick ratio} = \frac{\text{C.A.} - \text{Invy.}}{\text{C.L.}}$$

1.0 is OK

2. Asset Mgmt. Ratios

$$a. \text{ Collection Period} = \frac{\text{accts. Rec.}}{\text{Sales/yr}} \times 365$$

Note fundamental eqn. of turnover:

$$\frac{\text{Fund}}{\text{Flow}} = \text{Pd.}$$

True of booktubs; money in accts; inventories; ~~etc.~~ students; etc.

$$\frac{\text{Flow}}{\text{Fund}} = \text{Turnover}$$

When units are fungible, ratio is the only way to tell.

(Fungible vs. interchangeable, when you ask how much, not how many.)

$$b. \text{ Inventory Turnover} = \frac{\text{Goods sold}}{\text{Inventory}}$$

(both are m/srd. at cost. This can need modifying if much value is added along the way. 7 will show how later)

(Inv/Sales ratio, Nov. '84, just reported, is 1.36 mos., at "all bus. stages".
Inv = \$5646. So ~~Inv~~^{Sales}/~~Sales~~^{Inv} is .74. Tax bias keeps inv. too low. Oil inv. is much higher; growing lower.

$$c. \text{ Fixed Asset Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

(Not generally valid! Varely v's states turnover of fixed assets.

Sales - expenses - ~~depr~~ int. & unrec. cap = recovery

$$\frac{\text{Recovery}}{\text{F.a.}} = \text{F.a.T.}$$

(Land doesn't turn, so base shld. be F.a. - Land.)

7 will distrib. paper on F.a.T.

F.a.T. is too important to neglect, as P. does.

P's neglect of this impt. topic is ~~typical~~ all too typical of many large firms.

E.g. Fluor Engg. r.e. all over world in '70s, having more money than they cd. use.

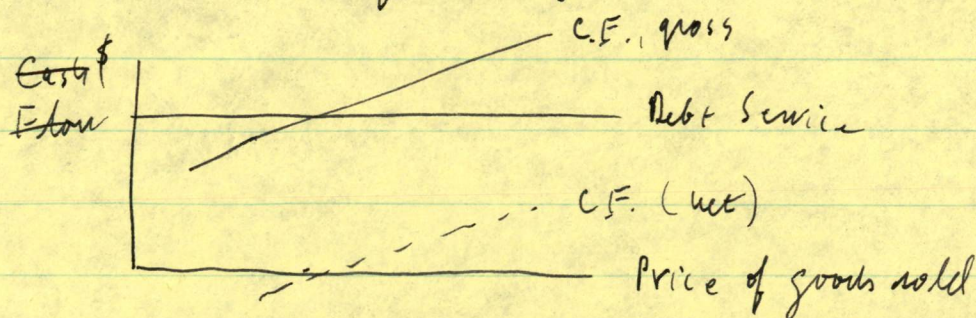
d. Total Asset Turnover.

No more valid than F.A.T.

3. Debt Mgmt. Ratios

a.
$$\frac{\text{Total Debt}}{\text{T.A.}}$$

High ratio shows use of leverage



b. "Times interest earned"

$$\frac{\text{EBIT}}{\text{Int}}$$

(aka bond coverage, a fetish w. bond counsels)
Because of fetishes - they replace obsrv. & analysis. E.g. of off-balance bncg.)

c. Fixed charges coverage ratio

$$\frac{\text{EBIT} + \text{lease obligations}}{\text{Int.} + \text{lease obligations}}$$

Treats long leases like debt.

4. Profitability Ratios

$$a. \text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Sales}}$$

p. 58, is widely used performance standard of "effic. of mgmt". [Yet is of dubious value — penalizes volume; rewards underutilizing fixed assets.]

If double sales, and Δ N.I. by 25%, you lower this ratio.

If become a pure rental, ratio is 100%!

$$b. \text{Return on T.A.} = \frac{\text{Net Inc. (+ Int., I presume)}}{\text{T.A.}}$$

This is the only performance standard to use.

But must add unrealized apprec.

i. e.g. of Getty leaseholds

ii. e.g. of holding timber

iii. e.g. of rising inc. prop.

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

$$V_i = a + Vg$$

$$i = \frac{a + Vg}{V} = \frac{a}{V} + g$$

$$c. \text{ Return on Equity} = \frac{\text{Net Inc}}{\text{TA} - \text{debt}} = \text{"ROE"}$$

5. Market Ratios

a. P/E

b. $\text{Div. payout} = \frac{\text{Divs.}}{\text{Earnings}}$

"Du Pont System", from ~~1910~~ ca. 1920.

1. Praise P.S. DuPont.

2. Donaldson Brown + GM

3.
$$\frac{\text{Earnings}}{\text{TA}} = \text{Profit margin} \times \text{turnover}$$

Advantages

1. Breaks out 2 input. variables for separate observation + control

- "profitability" (= profit margin)

- "asset utilization" (= turnover)

(P. says they used T.A.T.)

(In practise that means giving responsibility to speeding payback.)

2. Easy to communicate

We have seen + will see how crude this system is, math. + intellectually. That it was considered a great advance gives you an idea of what dull pencils are used in running business - + how you can profit!

$$ROE = \frac{ROTA}{\frac{Eq.}{TA}} = \frac{ROTA}{1 - \frac{Debt}{TA}} = \frac{Margin \times Turnover}{1 - \frac{Debt}{TA}}$$

The eqn. shows 3 ways to Δ ROE:

1. Δ margin

2. Δ Turnover

3. Δ Debt (Leverage of this!)

Tues., Jan. 22, '85

Ec. 134.

Cash Flow

$$CF = \text{Dep.} - \text{Inc.} = \text{Inc.}$$

$$\text{Sales} - \text{expenses} - \text{taxes} = CF.$$

1. w/o taxes.

$$CF_{BT} - \text{Dep.} = \text{Inc.} = EBT$$

2. w/o deprec.

$$CF + \text{Taxes} = \text{Inc.}$$

$$CF = \text{Inc} - \text{Taxes}$$

3. $CF_{AT} = \text{Sales} - \text{expenses} - \text{taxes} = CF_{BT} - \text{Taxes}$

But taxes depend on income, which is on $CF_{BT} - \text{Dep}$

p. 86

$$CF_{AT} = \underline{CF_{BT} - T(CF_{BT} - \text{Dep})} = \underline{CF_{BT}(1-T) + T \text{Dep}}$$

(Here, we skip over real & GAAP dep., use Tax deprec. only)

✓ "Deferred tax acct." is almost entirely due to diff. of GAAP deprec. & Tax deprec.

ACRS, p. 91.

15, 10, 5, 3

✓

✓

18

Real Estate ?

15

P.U.

10

R.V. cars.

5

Most equipment, furniture, fixtures

3

Vehicles

Now under heavy attack.

Corp. T is 46% max., from \$100k

Some tax matters, pp. 90 -

Bin vs. inventory inv.

a. No ITC

b. Δ inv. is taxed, b.c. cost of goods not sold is

not deductible. Even if FIST. (and if the Δ inv. is maintained, it is

✓ "Forever First".)

immediately.

c. Phantom profit from infln. is taxed immedi-

d. Never deduct faster than used up.

(But a few special, growing inventories get cap. gains: oil reserves; timber; cattle; racehorses.)

Ec. 134

Tues.

2-12-85

1. Discuss exams.

2. IRR, ROI, Target, M&L, etc.

a. P1PO. b

Effect of l.v.

i. Static

ii. Dynamic.

b.
$$\bar{i} = \frac{a}{p} (1 - \bar{I}^{-n}) \quad (\text{ASN to COS})$$



Computation of Investment Credit

► Attach to your tax return.
► Schedule B (Business Energy Investment Credit) on back.

OMB No. 1545-0155

1984
24

Identifying number

Part I Elections (Check the box(es) below that apply to you (See Instruction D).)

- A** I elect to increase my qualified investment to 100% for certain commuter highway vehicles under section 46(c)(6) ☐
- B** I elect to increase my qualified investment by all qualified progress expenditures made this and all later tax years ☐
Enter total qualified progress expenditures included in column (4), Part II ►
- C** I claim full credit on certain ships under section 46(g)(3) (See **Instruction B** for details.) ☐

Part II Qualified Investment (See instructions for new rules on automobiles and certain property with any personal use)

1 Recovery Property	Line	(1) Class of Property	(2) Unadjusted Basis	(3) Applicable Percentage	(4) Qualified Investment (Column 2 x column 3)
Regular Percentage	New Property (a)	3-year		60	
	(b)	Other		100	
	Used Property (c)	3-year		60	
	(d)	Other		100	
Section 48(q) Election to Reduce Credit (instead of adjusting basis)	New Property (e)	3-year		40	
	(f)	Other		80	
	Used Property (g)	3-year		40	
	(h)	Other		80	
2 Nonrecovery property—Enter total qualified investment (See instructions for line 2)				2	
3 New commuter highway vehicle—Enter total qualified investment (See Instruction D(1))				3	
4 Used commuter highway vehicle—Enter total qualified investment (See Instruction D(1))				4	
5 Total qualified investment in 10% property —Add lines 1(a) through 1(h), 2, 3, and 4 (See instructions for special limits)				5	
6 Qualified rehabilitation expenditures—Enter total qualified investment for:					
a 30-year-old buildings				6a	
b 40-year-old buildings				6b	
c Certified historic structures (You must attach NPS certification—see instructions)				6c	

Part III Tentative Regular Investment Credit

7 10% of line 5	7	
8 15% of line 6a	8	
9 20% of line 6b	9	
10 25% of line 6c	10	
11 Credit from cooperatives—Enter regular investment credit from cooperatives	11	
12 Regular investment credit—Add lines 7 through 11	12	
13 Business energy investment credit—From line 11 of Schedule B (see back of this form)	13	
14 Current year investment credit—Add lines 12 and 13	14	

Note: If you have a 1984 jobs credit (Form 5884), credit for alcohol used as fuel (Form 6478), or employee stock ownership plan (ESOP) credit (Form 8007), in addition to your 1984 investment credit, you must stop here and go to new **Form 3800**, General Business Credit, to claim your 1984 investment credit. If you have only the investment credit (which may include business energy investment credit) or an investment credit carryforward from 1983, you may continue with lines 15 through 22 to claim your credit.

15 Carryforward of unused regular or business energy investment credit from 1983	15	
16 Total—Add lines 14 and 15	16	

Part IV Tax Liability Limitations

17 a Individuals—From Form 1040, enter amount from line 46 b Estates and trusts—From Form 1041, enter tax from line 26a, plus any section 644 tax on trusts c Corporations—From Form 1120, Schedule J, enter tax from line 3 (or Form 1120-A, Part I, line 1) d Other filers—Enter tax before credits from return	17	
18 a Individuals—From Form 1040, enter credits from line 47, plus any orphan drug, nonconventional source fuel, and research credits b Estates and trusts—From Form 1041, enter any credits from line 27d c Corporations—From Form 1120, Schedule J, enter credits from lines 4(a) through 4(e) (Form 1120-A filers, enter zero) d Other filers—See instructions for line 18d	18	
19 Income tax liability as adjusted (subtract line 18 from line 17)	19	
20 a Enter smaller of line 19 or \$25,000. (See instructions for line 20) b If line 19 is more than \$25,000—Enter 85% of the excess.	20a	
	20b	
21 Investment credit limitation—Add lines 20a and 20b	21	
22 Total allowed credit—Enter the smaller of line 16 or line 21. This is your General Business Credit for 1984. Enter here and on Form 1040, line 48; Form 1120, Schedule J, line 4(f); Form 1120-A, Part I, line 2; or the proper line of other returns	22	

Schedule B.—Business Energy Investment Credit

1 Enter on lines 1(a) through 1(e) your qualified investment in business energy property that is the kind listed in the instructions for line 1, column (2).						
Type of Property	Line	(1) Class of Property or Life Years	(2) Code	(3) Unadjusted Basis/ Basis	(4) Applicable Percentage	(5) Qualified Investment (Column 3 x column 4)
Recovery	(a)	3-year			60	
	(b)	Other			100	
Nonrecovery	(c)	3 or more but less than 5			33 ⅓	
	(d)	5 or more but less than 7			66 ⅔	
	(e)	7 or more			100	
2 Total 10% energy investment property—Add lines 1(a) through 1(e), column (5)					2	
3 Enter on lines 3(a) through 3(e) the basis in qualified hydroelectric generating property. Enter nameplate capacity of the property (see instructions for line 3) ▶						
Recovery	(a)	3-year			60	
	(b)	Other			100	
Nonrecovery	(c)	3 or more but less than 5			33 ⅓	
	(d)	5 or more but less than 7			66 ⅔	
	(e)	7 or more			100	
4 Total 11% energy investment property—Add lines 3(a) through 3(e), column (5)					4	
5 Enter on lines 5(a) through 5(e) the basis in energy property that is solar equipment, wind equipment, ocean thermal equipment, or geothermal equipment. (See instructions for line 5, column (2).)						
Recovery	(a)	3-year			60	
	(b)	Other			100	
Nonrecovery	(c)	3 or more but less than 5			33 ⅓	
	(d)	5 or more but less than 7			66 ⅔	
	(e)	7 or more			100	
6 Total 15% energy investment property—Add lines 5(a) through 5(e), column (5)					6	
7 Enter 10% of line 2					7	
8 Enter 11% of line 4					8	
9 Enter 15% of line 6					9	
10 Cooperative credit—Enter business energy investment credit from cooperatives					10	
11 Tentative business energy investment credit—Add lines 7 through 10. Enter here and on line 13 of page 1					11	

**Instructions for Schedule B
(Form 3468)**

Energy property must meet the same requirements as regular investment credit property, except that the provisions of sections 48(a)(1) and 48(a)(3) do not apply. See Instructions for Form 3468 for definitions and rules regarding regular investment credit property.

Energy property must be acquired new. See sections 46(a)(2)(C) and 48(l)(1) through (17) for details.

See section 48(l)(17) for special rules on public utility property, and section 48(l)(11) (as amended by the Crude Oil Windfall Profit Tax Act of 1980) for special rules on property financed by Industrial Development Bonds.

Specific Instructions

One Credit Only.—If property qualifies as more than one kind of energy property, you may take only one credit for the property.

Lines 1, 3, and 5—Type of Property.—For definition of recovery and nonrecovery property, see the separate Instructions for Form 3468.

Line 1—Column (2).—Use the code letters from the following list to indicate the kind of property for which you are claiming a credit. If you enter more than one kind of property on a line, enter the code letter for each kind of property in column (2) and the code letter and dollar amount of each kind of property in the right hand margin.

The code letters are:

- Biomass property
- Qualified intercity buses (see section 48(l)(16)(C) for the limitation on qualified investment for intercity buses based on the increase in operating seating capacity).

Line 3.—Figure your qualified investment in hydroelectric generating property. If the installed capacity is more than 25

megawatts, the 11% energy credit is allowed for only part of the qualified investment. See section 48(l)(13)(C).

In the space provided in line 3, enter the megawatts capacity of the generator as shown on the nameplate of the generator.

Line 5—Column (2).—Use the code letters from the following list to indicate the kind of property for which you are claiming a credit. Be sure to put the code or codes on the line for the correct recovery period or life years as explained in the instructions for line 1, column (2).

- Solar equipment (but not passive solar equipment)
- Wind equipment
- Ocean thermal equipment
- Geothermal equipment

See sections 48(l)(4) and 48(l)(3)(A)(viii) and (ix) for definitions and special rules that apply to these kinds of property.

Tues, 2-26

I Effect of L.V. on RA

II ~~2nd~~ Working Cap.

1. Classic costs, stress on.

Fixed v. Circ. cap.

Imptrce. of avoiding cash crisis

Cite Luke

Nuclear debacle -- failure of fuel. mgmt.

Meeting the payroll

2. Fixed Cap. relation to working cap.

Cash flow goes back into working cap.

3.

1. List study qns. from older sets.
2. Discuss num qns. Also, Text qns. - skip "beta".
3. " new window, RRAT.
4. Show harder case solved. HP 38E
5. Qns, Ch. 7.
6. Rdgs.
p. 213-14

n k
→

Face & Macro

Reverse Mortgage, or "reverse annuity" mortgage.
IRMA = "Indiv. Retirement Mortgage Act."

1981, FHLLBB first authorized. But S+Ls were strapped, stayed out. Now Prudential is going in, thru a sub, Prud. Backe Sec.

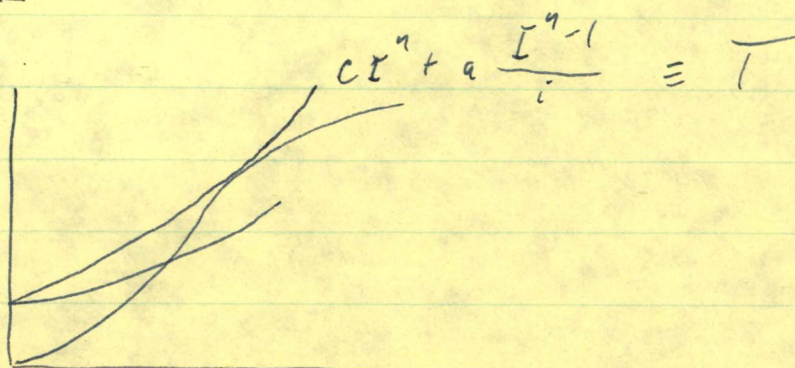
$$F = a \frac{I^n - 1}{i}$$

Loan repaid upon sale of house.

Max. $n = 10$ yrs., ~~is~~ is most common.

Another variation, it's a life annuity, and lender shares in any appreciation of the house.

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



$$\frac{\Delta T}{\Delta n} = i C I^n + i a \frac{I^{n-1}}{i} + a = I^n [Ci + a] = i I^n (C + s)$$

Absent:

Krauth

Taylor

Bradley

Alva

Lawrence