

Investment Fundamentals

**Or How My Clients Invested \$1,000
in Real Estate and
Became Wealthy Over Time**

Deborah Long, Ed.D., DREI

DebbieTheTeacher@gmail.com

www.DebbieTheTeacher.com



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Rules of engagement

In order to receive credit for this course, you must:

- have your webcam on 90% of the time;
- keep your device stationary;
- respond to polls, questions, and assignments;
- have pencil, eraser and calculator handy;
- minimize other distractions to participation.

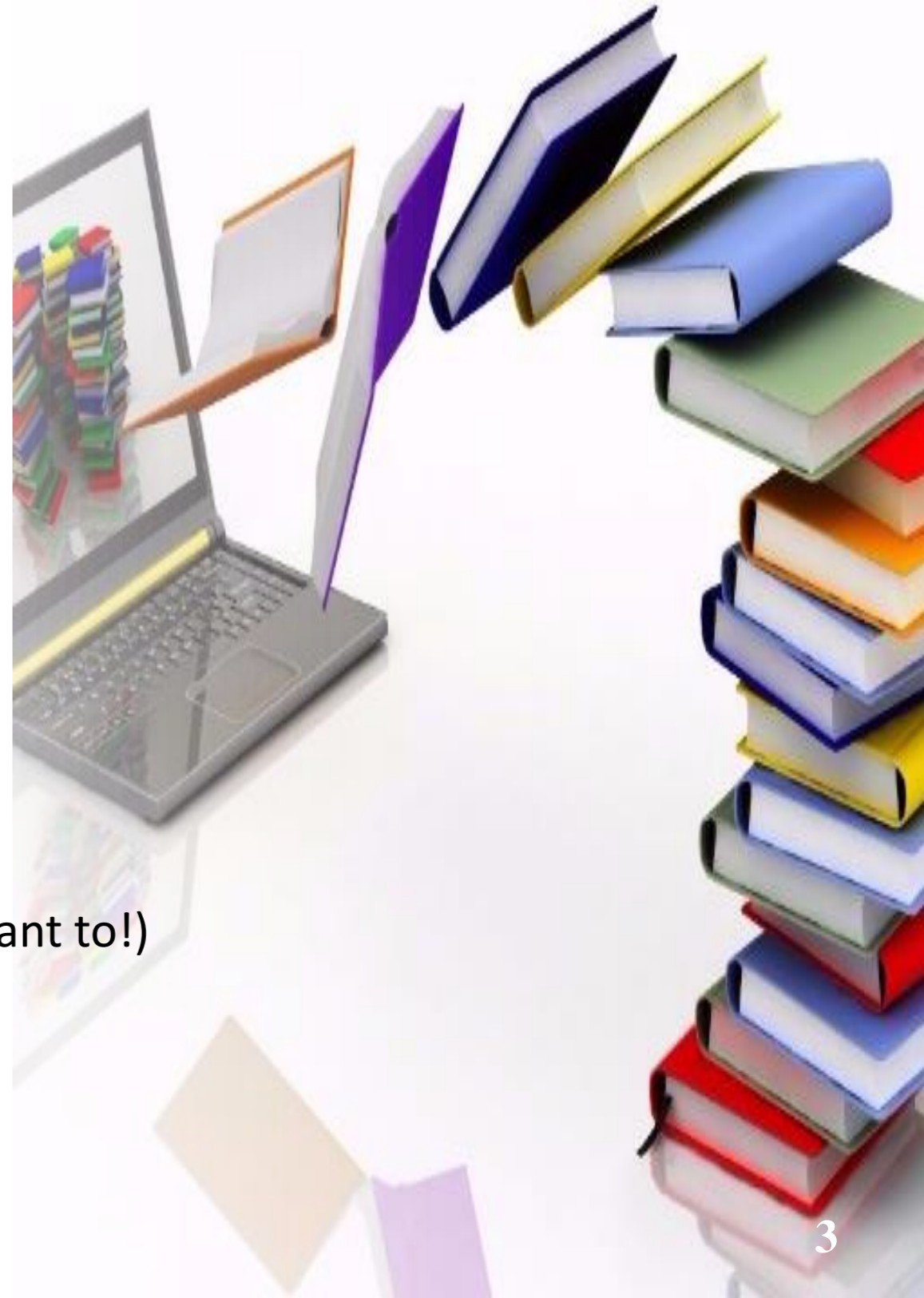
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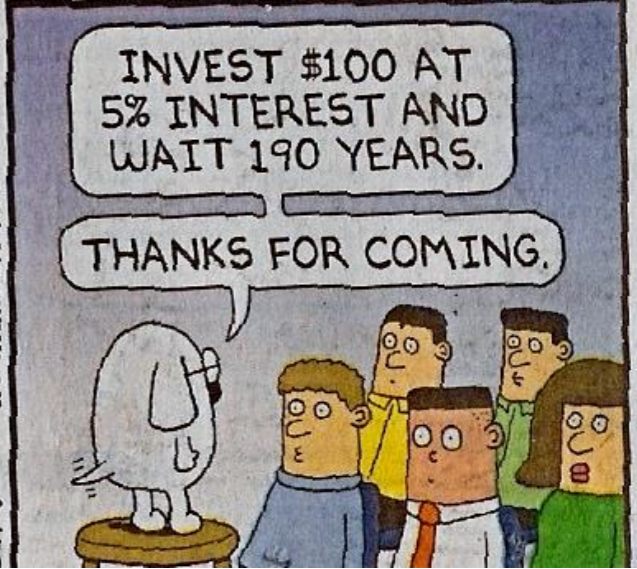
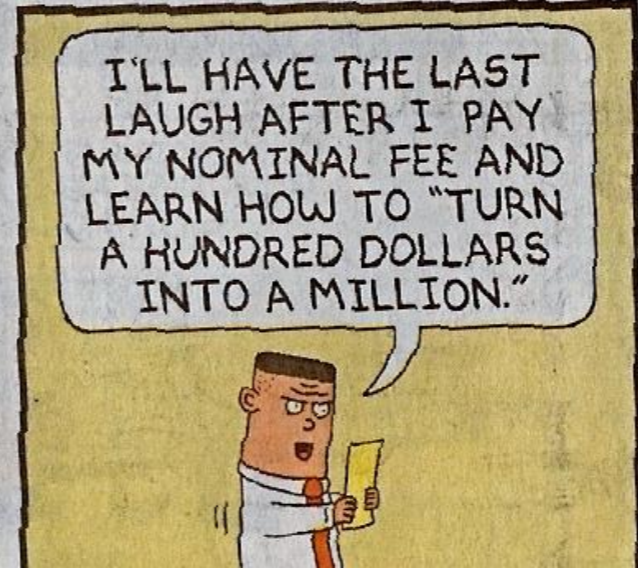
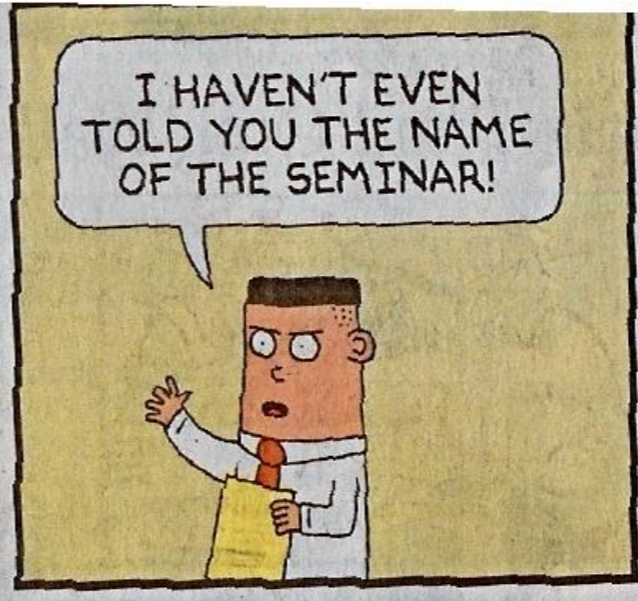
RULES of ENGAGEMENT

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Your course materials:
<https://debbietheteacher.com/ifcourse>

- two copies of FMRR form
- one copy of Ott Case Study
- one copy of Case Study #2
- one copy of Tables A and B
- The textbook
 - Do not print the textbook as it is very long (unless you want to!)





E-mail: SCOTTADAMS@AOL.COM

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Course objectives

By the end of this 4-hour program, students will be able to:

- Compare and contrast various measures of return;
- Perform an investment analysis of income/rental property using the FMRR.

Qualifying the investor (pp. 33-37)

- Amount of initial investment required.
- Amount and timing of cash flows expected from the investment.
- The certainty of anticipated investment performance.
- Amount of expertise and time required to manage the investment.
- Tax impact.
- Yield measurement.

Yield measurements: (p. 35)

When a prospective landlord states, “a 5% return,” the real estate agent needs to know if the client is referring to:

- 5% return on a cash investment equal to the purchase price (capitalization rate);
OR
- 5% return on the down payment (cash-on-cash return/equity dividend rate);
OR
- 5% return on the down payment, closing costs and other initial expenses; OR
- before-tax 5% return; OR
- after-tax 5% return; OR
- 5% return this year; OR
- average 5% return for every year of ownership; OR
- 5% return including sale proceeds (FMRR).

This course
discusses the
following yield
measurements:

- A return on a cash investment equal to the purchase price (**capitalization rate**);
- A return on the down payment (**equity dividend rate**);
- A return including sale proceeds (**FMRR**).

Capitalization Rate

(pp. 40-43)

Process of converting future income into a single present amount.

$$\frac{\text{Net Operating Income}}{\text{Cash Value}} = \text{Cap Rate}$$

A pro forma or reconstructed operating statement

- Create a statement of projected income and expenses statement for the next 12 months.
- Base projections on one or two years and from other available resources.
- Use annual figures.

40 units - Efficiency	\$312,000
60 units - 1 Bedroom / 1 Bath	\$864,000
40 units - 2 Bedroom / 2 Bath	\$1,008,000
POTENTIAL RENTAL INCOME	\$2,184,000
General Vacancy	(\$196,560)
EFFECTIVE RENTAL INCOME	\$1,987,440
Property Taxes	(\$146,500)
Insurance	(\$15,000)
Management Fee	(\$262,080)
Repairs and Maintenance	(\$90,000)
Office Expense	(\$20,000)
Advertising	(\$12,000)
Utilities	(\$65,000)
Miscellaneous Expenses	(\$25,000)
Reserves	(\$35,000)
Total Expenses	(\$670,580)
NET OPERATING INCOME	\$1,316,860

The capitalization rate

Projected gross income	\$14,400
- vacancies (8%)	<u>-1,152</u>
Effective gross income	\$13,248
- operating expenses	<u>- 4,600</u>
Net operating income	\$8,648

$$\frac{\$8,648 \text{ Net Op. Income}}{\$175,000 \text{ Sales Price (V)}}$$

= 4.94% cap rate

Problems with Cap Rate

- Considers operating expenses.
- Considers periodic vacancy.
- What does it ignore?
 - appreciation
 - financing/leveraging
 - tax consequences and
 - proceeds from the sale.

Cash-on-cash return

(or *equity dividend rate/EDR*)
(pp. 43-45)

Measures the return received
on the initial investment.

$$\frac{\text{Cash Flow}_{\text{(BTCF)}}}{\text{Initial Investment}} = \text{Cash-on-cash return}$$

(or *equity dividend rate*)

Calculating the cash-on-cash return

Projected gross income	\$14,400
- <u>vacancies (8%)</u>	<u>-1,152</u>
Effective gross income	\$13,248
- <u>operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,648
- <u>debt service</u> (\$1,766 is principal)	<u>- 7,891*</u>
(Before-Tax) Cash Flow	\$ 757

*assumes \$175,000 purchase; 30% down; \$122,500 loan at 5% for 30 years

\$175,000
x 30% down
\$52,500
+ 3,500 closing costs
\$56,000 total down

$$\frac{\$ 757 \text{ BTCF}}{\$56,000 \text{ down pmt}} =$$

including \$3,500 in closing costs

**1.35% cash-on-cash return
or EDR**

Problems with the Cash-on- Cash Return

- Considers operating expenses and leverage.
- But what does it still ignore?
 - tax consequences;
 - appreciation; and
 - sales proceeds.

Financial Management Rate of Return (FMRR) (p. 47)

- Assumes that investor wants long-term wealth building.
- FMRR is considered by many to be one of the best measurement tools.

Let's talk **tax consequences** first:

Calculating taxable income

(p. 49)

Projected gross income	\$14,400
<u>- vacancies</u>	<u>- 1,152</u>
Effective gross income	\$13,248
<u>- operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,648
-interest	- 6,125
<u>-depreciation</u>	<u>- 16,660</u>
Taxable Income	- 14,137

What is the significance of negative taxable income?

Negative taxable income is a **GOOD** thing.

Net operating income	\$ 8,648
-interest	- 6,125
<u>-depreciation</u>	<u>- 16,660</u>
Taxable Income	- 14,137
<u>Tax bracket</u>	<u>x 32%</u>
Tax saved	- \$4,524

If Bill and Ginny earned \$100,000 of ordinary income, the IRS would see it this way:

\$100,000 income
<u>-14,137 loss of income on condo</u>
\$ 85,863 taxable income

This is \$4,524 the IRS is NOT receiving.

What if the **taxable income** were **positive**?

Calculating Depreciation



Purchase price	\$175,000
Closing costs	+3,500
<hr/>	
Total acquisition costs	\$178,500
Improvement Value	x 80%
<hr/>	
Cost basis	\$142,800

How Tax Reform Acts Have Reduced Depreciation Deductions

(p. 51)

In 1981

$$\frac{\text{142,800 Cost Basis}}{\text{15 years}} = \text{\$9,520}$$

Under ACRS:

$$\text{\$9,520} \times 175\% =$$

\\$16,660 depreciation deduction

1981 Tax Consequences

Projected gross income	\$14,400
<u>- vacancies</u>	<u>- 1,152</u>
Effective gross income	\$13,248
<u>- operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,646
-interest	- 6,125
<u>-depreciation</u>	<u>- 16,660</u>
Taxable Income	- 14,137
<u>x tax bracket</u>	<u>x 50%</u>
Tax saved	\$ 7,069

Current Rules: Residential Property

$$\frac{\text{142,800 Cost Basis}}{27.5 \text{ years}} = \$5,193$$

NO ACRS 😞

Current Rules: Commercial Property

$$\frac{\text{142,800 Cost Basis}}{39 \text{ years}} = \$3,662$$

No ACRS ☹️

1981 Tax Consequences

Projected gross income	\$14,400
<u>- vacancies</u>	<u>- 1,152</u>
Effective gross income	\$13,248
<u>- operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,648
-interest	- 6,125
<u>-depreciation</u>	<u>- 16,660</u>
Taxable Income	- 14,137
<u>x tax bracket</u>	<u>x 50%</u>
Tax saved	\$ 7,069

2021 Tax Consequences

24% tax bracket

Projected gross income	\$14,400
<u>- vacancies</u>	<u>- 1,152</u>
Effective gross income	\$13,248
<u>- operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,648
-interest	- 6,125
<u>-depreciation</u>	<u>- 5,193</u>
Taxable Income	- 2,670
<u>x tax bracket</u>	<u>x 24%</u>
Tax saved	\$ 641

2021 Tax Consequences

35% tax bracket

Projected gross income	\$14,400
<u>- vacancies</u>	<u>- 1,152</u>
Effective gross income	\$13,248
<u>- operating expenses</u>	<u>- 4,600</u>
Net operating income	\$ 8,648
-interest	- 6,125
<u>-depreciation</u>	<u>- 5,193</u>
Taxable Income	- 2,670
<u>x tax bracket</u>	<u>x 35%</u>
Tax saved	\$ 935

Calculate **after-tax** cash flow (ATCF)

Before tax cash flow
+ tax saved or (– taxed owed)
After-tax cash flow

<i>Before-tax</i> cash flow:	\$ 757 *
<u>+ tax savings</u>	<u>+ 641**</u>
<i>After-tax</i> cash flow	\$1,398

* Slide 19

**Slide 31

After-tax equity dividend rate

After-tax cash flow:
Down payment

$$\frac{\$1,398}{\$56,000} = 2.5\%$$

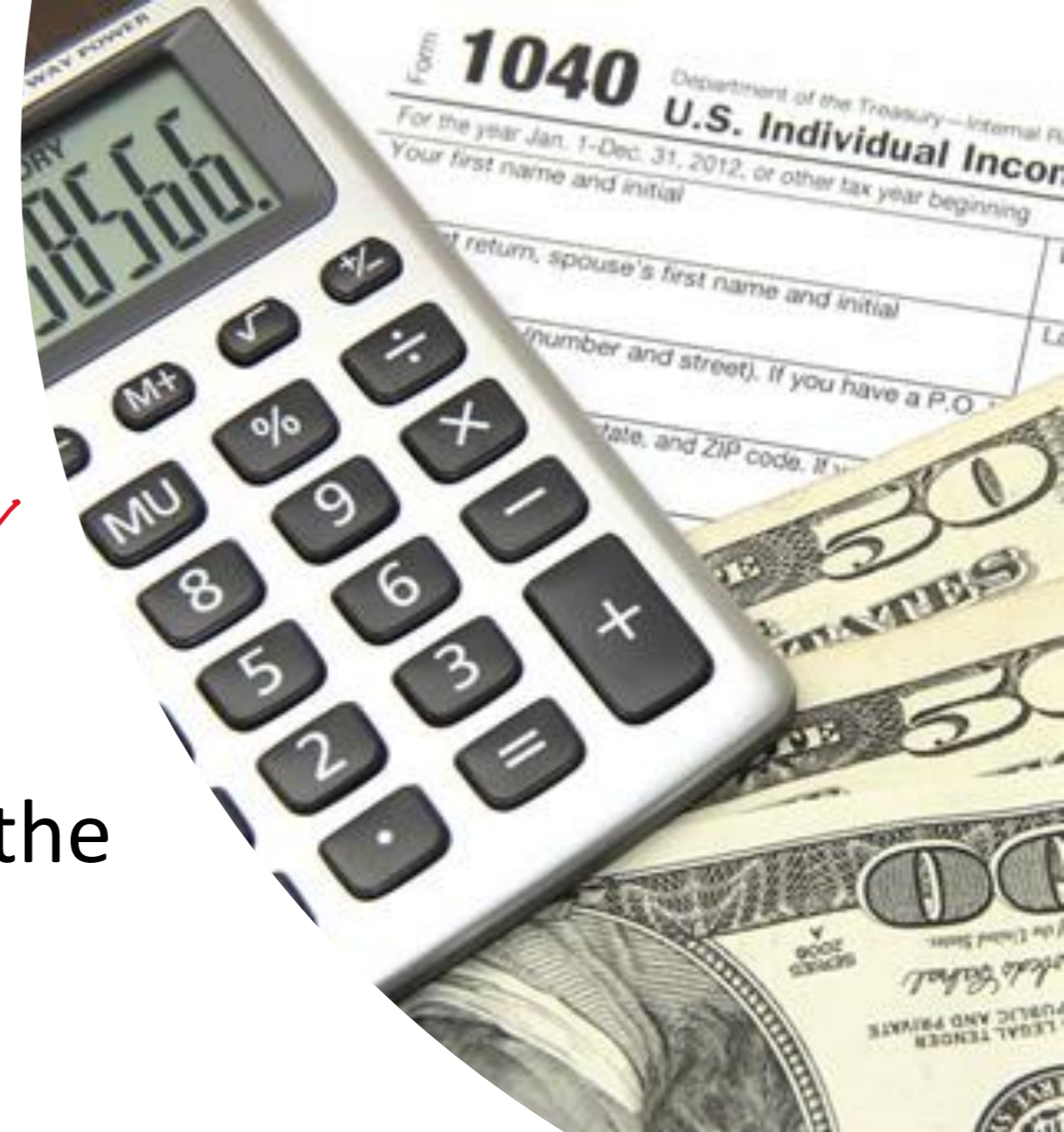
Before-tax equity dividend rate

Before-tax cash flow:
Down payment

$$\frac{\$ 757}{\$56,000} = 1.35\%$$

Two more potential taxes on the ownership / sale of investment property

1. Income tax on **rents/income** ✓
2. **Capital gains tax** on the sale
3. **Depreciation recapture tax** on the sale



2. Capital Gains Tax

American Tax Relief Act of 2012 (TATRA)

Long-term capital gains tax is a tax on profits from the sale of an asset held for more than one year.

2021 capital gains tax rates

Tax-filing status	Single	Married, filing jointly	Married, filing separately	Head of household
0%	\$0 to \$40,400	\$0 to \$80,800	\$0 to \$40,400	\$0 to \$54,100
15%	\$40,401 to \$445,850	\$80,801 to \$501,600	\$40,401 to \$250,800	\$54,101 to \$473,750
20%	\$445,851 or more	\$501,601 or more	\$250,801 or more	\$473,751 or more

Short-term capital gains are taxed as ordinary income according to [federal income tax brackets](#).

Remember the rules on the capital gain of a personal residence are different.

How do you calculate **capital gains** taxes?

Sales price (in future)	\$202, 825
<u>-costs of sale (commission, etc) (6%)</u>	<u>-12,170</u>
Realized sales price	\$190,655
<u>-Acquisition costs (purchase price, closing costs)</u>	<u>-178,500</u>
Capital gain	\$12,155
<u>X appropriate tax rate</u>	<u>X?</u>
Capital gain tax due	\$\$\$\$\$

3. Depreciation Recapture Tax

- Add up all the depreciation you have taken.
- Currently taxed at 25%
- Depreciation *must* be taken.
- Remember: when you sell an investment property for cash, you must pay both **capital gains** and **depreciation recapture taxes**.

$$\begin{array}{r} \$5,193 \text{ yearly dep. deduction} \\ \quad \times \underline{5 \text{ years}} \\ \hline 25,965 \text{ depreciation} \\ \quad \times \underline{25\%} \\ \hline \$6,491 \text{ dep. tax} \end{array}$$

Future Value of Money:

Table A: The “WC Fields Table” or Put \$1 away and fuggadaboutit, pp. 68-69

68 chapter seven

Table A. Future Value of \$1 Lump Sum (or the Value of \$1 Saved Each Year) Compounded at Various Interest Rates for Various Periods

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100
2	1.020	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594

Time Value of Money: Lump Sum (pp. 68-69)

- Future value--using
- The future value of \$1 at 10% in 10 years

Table A calculates $\$1 = 2.594 = \2.59

the factor

Where would Table A be useful in determining the value of rental property?

% in 10

% for 20

years

- $\$10,000 \times 6.727 = \$67,270$

Future Value of Money:

Table B: save \$1 today and then \$1 next year, pp. 70-71

70 chapter seven

Table B. Future Value of \$1 Annuity (or the Value of \$1 Saved Each Year + \$1 Added Each Year) Compounded at Various Interest Rates for Various Periods

Year	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.010	2.020	2.030	2.040	2.050	2.060	2.070	2.080	2.090	2.100
3	3.030	3.060	3.091	3.122	3.153	3.184	3.215	3.246	3.278	3.310
4	4.060	4.122	4.184	4.246	4.310	4.375	4.440	4.506	4.573	4.640
5	5.101	5.204	5.309	5.416	5.526	5.637	5.751	5.867	5.985	6.100
6	6.152	6.308	6.468	6.633	6.802	6.975	7.153	7.336	7.523	7.710
7	7.214	7.434	7.662	7.898	8.142	8.394	8.654	8.923	9.200	9.480
8	8.286	8.583	8.892	9.214	9.549	9.897	10.260	10.637	11.028	11.430
9	9.369	9.755	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.570
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487	15.193	15.930

Time Value of Money: Annuity

- Future value of an annuity

Table B: useful in determining the value of

- your 401k?
- savings for college tuition?
- Rental property?

other

f

if

One more step before we put it all together.

If you invested \$100 in bananas (\$1 each) and received a annual return of 3% of those bananas, how many bananas will you get back at the end of the year?



Three bananas.
Before tax.



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How many bananas would you have *after tax* if you were in the 33% tax bracket?

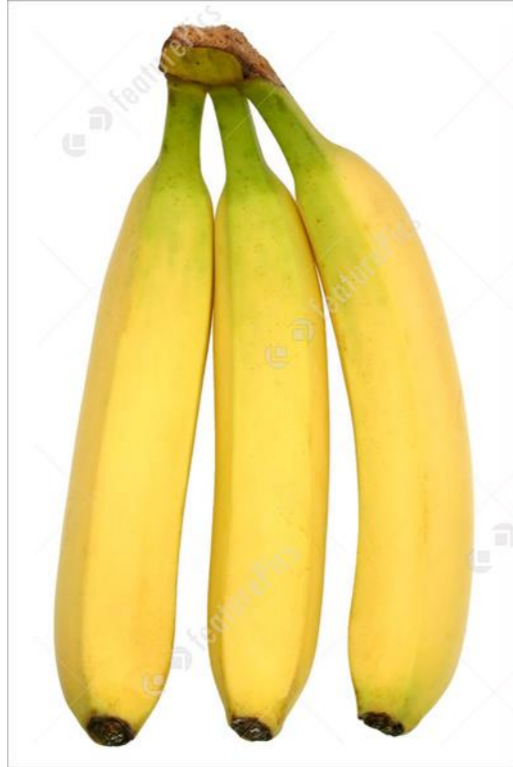


Approximately two bananas
after tax.

What's the math you performed to get two bananas?

3

$$\times 67\% = 2$$



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$$\times 67\% =$$

(what you keep)

(100%-33%=67%)



Why are we talking about ?

- Because we want to compare bananas to bananas--NOT bananas to oranges.
- The FMRR is based on *after-tax* calculations.
- How do we know if the FMRR is a good number?
- We compare the investor's return on alternative investments to the FMRR.
- If investors say that they can get 3% (or bananas) on another investment (say, the stock market market)—that's a **before-tax return**.
- We have to convert that 3% to an **after-tax return**.
- So we have to convert the 3% before-tax to an **after-tax** return of 2%.
- Now we know that the FMRR has to be better than 2%.

$$3\% \quad \times 67\% \quad = \quad 2\%$$



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$$\times 67\% =$$

(what you keep)

(100%-33%=67%)



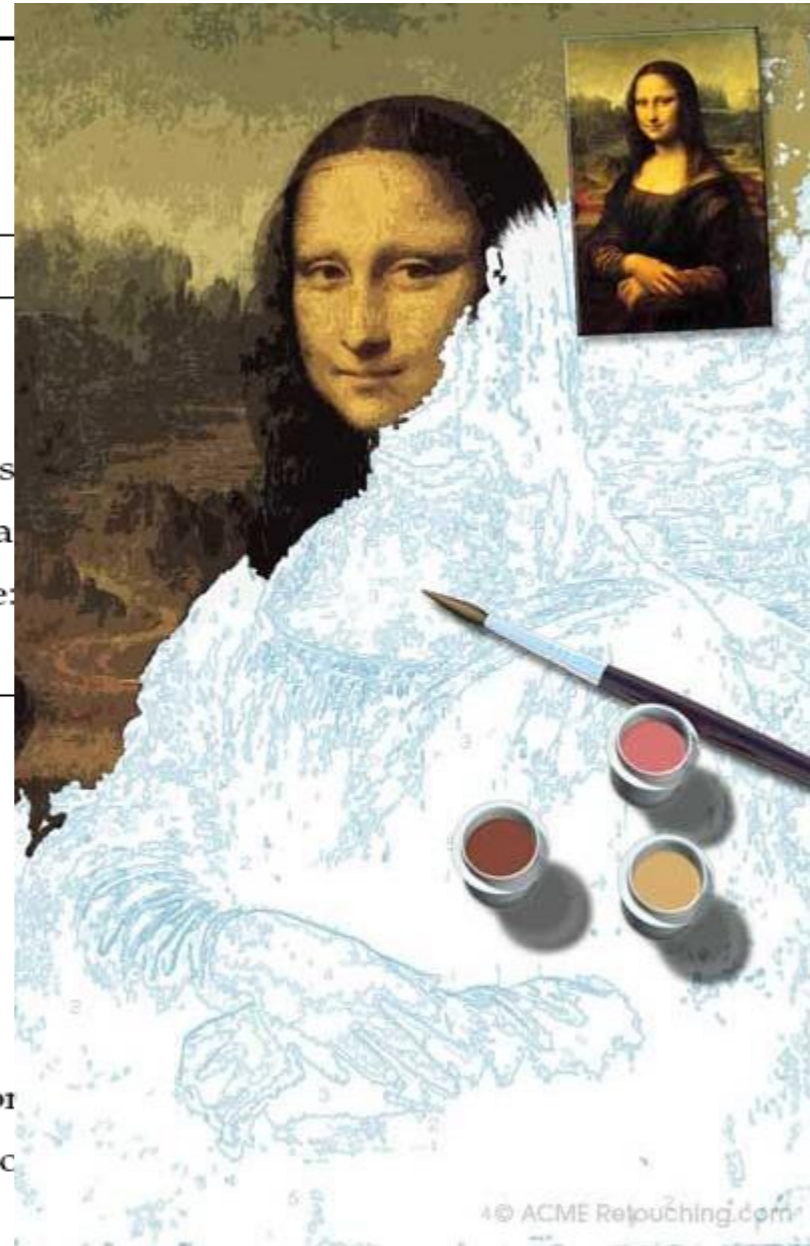
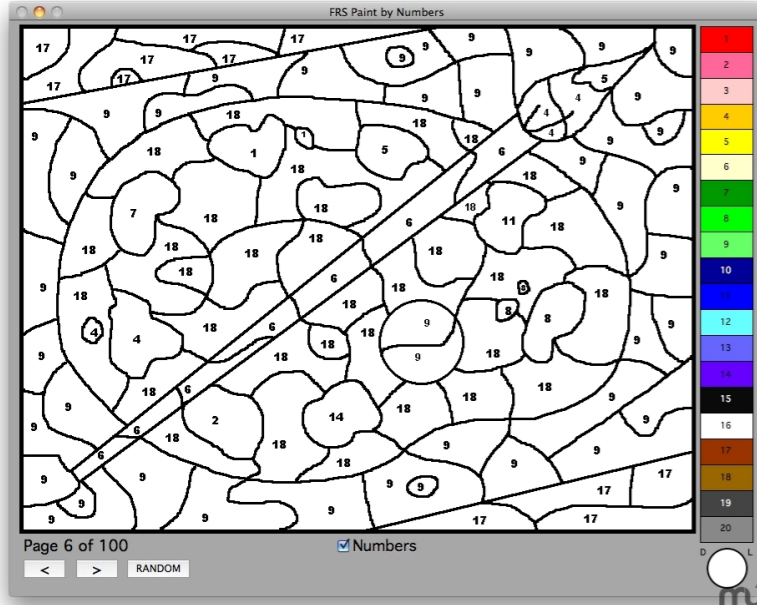
The Otts, p. 76

Case Study #1

Mr. and Mrs. Ott:

- are considering the purchase of a condo at 111 Condo Drive.

Worksheet 1



Remember paint-by-numbers? This is FMRR by the letters!

Improvement allocation
 Improvement value:
 1st mortgage:
 Principal:
 Debt service:
 Down payment:
 Add closing costs:
 Initial investment
 Gross monthly income
 Annual vacancy allowance

Summary

Date: _____

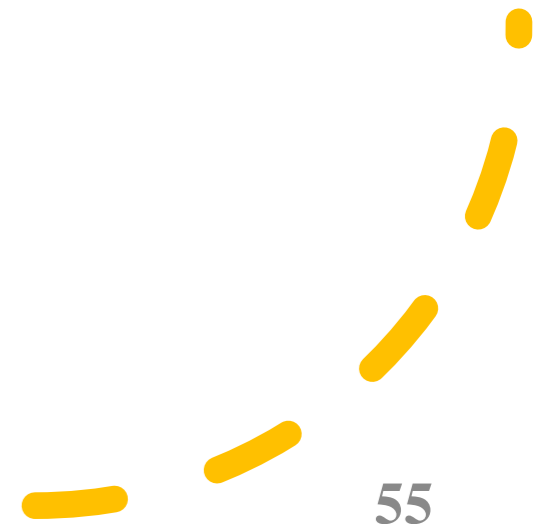
Interest _____ [f]
 _____ [g]
 _____ [h]

Net income: \$ _____ [j]
 Net income [j] = \$ _____ [k]



The purpose of
Worksheet #1

To lay out all of the paints and label them.



Worksheet 1: Property Summary

Rev. 2018

The purpose of worksheet 1- to get all the ingredients for the recipe laid out and labeled

Property Address: 111 Condo Drive
 Investor: Ott Date: _____

Purchase price:	_____	<u>\$175,000</u>	[a]	
Add closing costs:	+ _____	<u>3,500</u>	[b]	
Total acquisition cost:	_____	<u>\$178,500</u>	[c]	
Improvement allocation	x _____	<u>80</u>	%	
Improvement value	_____	<u>\$142,800</u>	[d]	

1st mortgage:	<u>\$122,500</u>	[e]	x rate	<u>5</u>	%	=	Interest	<u>6,125</u>	[f]
Principal:							+ _____	<u>1,766</u>	[g]
Debt Service							_____	<u>7,891</u>	[h]

Down payment:	\$ _____	<u>52,500</u>		
Add closing costs	+ _____	<u>3,500</u>	[b]	
Initial investment:	\$ _____	<u>56,000</u>	[i]	

Gross monthly income:	\$ _____	<u>1200</u>	x 12 = yrly. gross income:	\$ _____	<u>14,400</u>	[j]		
Annual vacancy allowance:	_____	<u>8</u>	%	x yrly. gross income [j]	=	\$ _____	<u>1,152</u>	[k]

Annual Operating Expenses	
Property taxes:	\$ <u>2,600</u>
Insurance:	+\$ <u>200</u>
Utilities:	+\$ _____
Maintenance:	+\$ <u>1,800</u>
Other:	+\$ _____
Annual Operating exp	:\$ <u>4,600</u> [1]

Investor's tax bracket 24 %[m]

Holding period: 5 yrs. [n]

Ann. appreciation: 3 % [o]

Proj. cost of sale: 6 % [p]

Inv. pre-tax rate: 3 %

(100% - 24 % tax bracket [m] = x 76 %

After-tax rate of return: 2 % [q] (rounded) *(This rate is the investor's desired after-tax rate of return. This rate should be contrasted with the FMRR on Worksheet 5.)*

The purpose of Worksheet #2

- To estimate how much cash the Otts will have at the end of the year.
- To calculate the cap rate and the before-tax equity dividend rate.

Worksheet 2: Before-Tax Cash Flow

Potential gross income:	14,400	[j]
<i>Less</i> vacancy allowance	- 1,152	[k]
Effective gross operating income:	13,248	
<i>Less</i> total operating expenses	- 4,600	[l]
Net operating income (NOI):	8,648	[r]
<i>Less</i> debt service	- 7,891	[h]
Before-Tax Cash Flow (BTCF)	757	[s]

Your client may want to know:

$$\frac{\text{NOI (r)} \quad 8,648}{\text{Pur. \$ (a)} \quad 175,000} = 4.94\%$$

(cap rate)

Your client may want to know:

$$\frac{\text{BTCF (s)} \quad 757}{\text{Equity (i)} \quad 56,000} = 1.35\%$$

**before-tax equity
dividend rate**

The purpose of Worksheet #3

- To estimate how much cash the Otts will have remaining after they pay taxes on their investment's earnings.
- To calculate the after-tax equity dividend rate.

Worksheet 3: After-Tax Cash Flow

Net operating income	\$	<u>8,648</u>	[r]
<i>Less</i> annual interest payment		- <u>6,125</u>	[f]
<i>less</i> depreciation		- <u>5,193</u>	[t]
Taxable income/loss	\$	<u>-2,670</u>	
x tax bracket	x	<u>24%</u>	% [m]
Tax savings (if <i>negative</i>) or tax liability (if <i>positive</i>)	\$	<u>-641</u>	[u]

Depreciation Calculation	
Improvement value	\$ <u>142,800</u> [d]
<i>Divided by</i> economic life	÷ <u>27.5</u> 27.5 or 39 yrs
Annual depreciation deduction	\$ <u>5,193</u> [t]

Your client may want to know:

ATCF (v)	<u>1,398</u>				
Equity (i)	<u>56,000</u>	=	<u>2.5%</u>	=	<u>1,398</u>

after-tax equity dividend rate

Before-tax cash flow:		<u>757</u>	[s]
<i>Add</i> tax savings or <i>subtract</i> tax liability:	+/-	<u>641</u>	[u]
After-tax cash flow:	\$	<u>1,398</u>	[v]



The purpose of Worksheet #4

- To estimate how much cash the Otts will after they sell the investment in five years.
- To calculate their appreciated value.
- To calculate their capital gain and depreciation recapture taxes.

Worksheet 4: After-Tax Proceeds from the Sale

Purchase price:	\$	175,000	[a]
Factor from Table A	x	1.159	
Projected sales price:	\$	202,825	[w]
Less cost of sale: [p ¹] <u>6</u> %		- 12,170	[p ²]
Realized sales price:	\$	190,655	
Less total acquisition		- 178,500	[c]
Capital gain	\$	12,155	
x max. cap gain tax (5%, 15% or 20%)		x <u>15</u> %	
Capital gain tax due	\$	1,823	
Add deprec recap tax		+ 6,491	
Tax due from sale*	\$	8,314	[x]

Use Table A and look up the factor for

3 % ann. appreciation rate [o]
5 yrs holding period [n]
1.159 factor

Depreciation Recapture

5,193 depreciation [t]
 x 5 holding period [n]
 = \$ 25,965 total depreciation
 x 25% deprec. recap. tax rate
 \$ 6,491 depreciation recap. tax

Projected sales price	\$	<u>202,825</u>	[w]
Less sales costs	-	<u>12,170</u>	[p ²]
Less mtg. balance	-	<u>112,490</u>	[*]
Less tax due	-	<u>8,314</u>	[x]
Net after-tax sales proceeds	\$	<u>69,851</u>	[y]

*Note: If sellers receive cash from the sale of their investment, the tax cannot be postponed. Sellers should consider a 1031-tax-deferred exchange before selling for cash.)

*instructor will provide or use amortization table

The purpose of Worksheet #5

- To estimate how the total future wealth obtain by the Ottts when they consider not only their sales proceeds but also the cash the investment has earned every year for five years.
- To calculate their FMRR.

Worksheet 5: Performance Summary

After-tax cash flow:	\$	1,398	[v]	
Factor from Table B		x 5.204		
Amount accumulated:	\$	7,275		
<i>Plus</i> net after-tax proceeds from sale	+	69,851	[y]	
Total future wealth: [FV]	\$	77,126	[z]	

Use Table B and look up the factor for

2	%	inv. after-tax rate	
		of return [q]	
5	yrs	holding	
		period [n]	
5.204		factor	

What *percentage return* on investment would the investor have received in order to have earned the **total future wealth** (above) after investing the **initial investment** (i) for the **holding period** (n)?

Guess the rate of return. You may have to try several factors from Table A as a multiplier to approximate the following: Initial investment x factor = total future wealth.

Initial investment: \$ 56,000 [i]

Factor x _____ =

Total future wealth: 77,126 [z]

(SHORTCUT: divide the total wealth by the initial investment; the result will be the Factor; then look at Table A and go down the column for years to find the holding period; then go across that row to find the closest factor you can find in that row.

The result is the approximate FMRR).

Use Table A and look up the factor for

? % 5 yrs
rate holding period [n]

_____ factor

Try different rates. The one that gets you closest to the amount for total future wealth [z] is the approximate FMRR.

Calculating the FMRR: Performance Summary

- Investors must ask, “What rate of return did I receive if I invested \$56,000 in this condominium for 5 years and received \$77,126 at the end of the holding period?”
- While a financial spreadsheet or calculator could do this calculation in seconds, calculating the FMRR by hand is more tedious.
- The investor must actually play a guessing game and use Table A to answer this question.

Guessing Game

- Let's *guess* that the Otts received 5% on their investment.
- Using Table A, we find that the factor for 5% for 5 years is _____.

$$\begin{array}{r} 56,000 \text{ Present Value} \\ \times \\ \hline ? \text{ Future Value} \end{array}$$

Could the rate have been 8%?

At 8%, the factor is _____:

$$\begin{array}{r} 56,000 \text{ Present Value} \\ \times \\ \hline ? \text{ Future Value} \end{array}$$

Financial Management Rate of Return (FMRR) between 6%-7% %

Note regarding the use of this form for clients

The numbers and percentages used in this analysis are based on assumptions about the future. For example, this analysis assumes that tax laws currently in effect will not change. The information on this analysis, as a consequence, **is not a guarantee** of investment performance.

-4-

Case Study 2: Radcliffe

See Handout

Property Address: _____

Investor: _____ **Case Study 2** _____

Date: Today

Purchase price: _____ **\$280,000** [a]

Add closing costs: + _____ **3,150** [b]

Total acquisition cost: _____ **283,150** [c]

Improvement allocation x _____ **70** %

Improvement value _____ **198,205** [d]

1st mortgage: _____ **210,000** [e] x rate _____ **5** % = Interest _____ **10,500** [f]

Principal: _____ + _____ **3,028** [g]

Debt Service _____ **13,528** [h]

Down payment: \$ _____ **70,000**

Add closing costs + _____ **3,150** [b]

Initial investment: \$ _____ **73,150** [i]

Gross monthly income: \$ _____ **3,000** x 12 = yrly. gross income: \$ _____ **36,000** [j]

Annual vacancy allowance: _____ **8** % x yrly. gross income [j] = \$ _____ **2,880** [k]

Annual Operating Expenses	
Property taxes:	\$ <u>6,800</u>
Insurance:	+\$ <u>500</u>
Utilities:	+\$ _____
Maintenance:	+\$ <u>6,000</u>
Other:	+\$ <u>900</u>
Annual Operating exp	:\$ <u>14,200</u> [l]

Investor's tax bracket 35 % [m]
 Holding period: 5 yrs. [n]
 Ann. appreciation: 3 % [o]
 Proj. cost of sale: 6 % [p]

Inv. pre-tax rate: 3 %

(100% - 35 % tax bracket [m] = x 65 %

After-tax rate of return: 2 % [q] (rounded) *(This rate is the investor's desired after-tax rate of return. This rate should be contrasted with the FMRR on Worksheet 5.)*

Worksheet 2: Before-Tax Cash Flow

Potential gross income:	<u>36,000</u>	[j]
<i>Less</i> vacancy allowance	<u>- 2,880</u>	[k]
Effective gross operating income:	<u>33,120</u>	
<i>Less</i> total operating expenses	<u>- 14,200</u>	[l]
Net operating income (NOI):	<u>18,920</u>	[r]
<i>Less</i> debt service	<u>- 13,528</u>	[h]
Before-Tax Cash Flow (BTCF)	<u>5,392</u>	[s]

Your client may want to know:

$$\frac{\text{NOI (r)} \quad \mathbf{18,920}}{\text{Pur. \$ (a)} \quad \mathbf{280,000}} = \mathbf{6.8\%}$$

(cap rate)

Your client may want to know:

$$\frac{\text{BTCF (s)} \quad \mathbf{5,392}}{\text{Equity (i)} \quad \mathbf{73,150}} = \mathbf{7.4\%}$$

**before-tax equity
dividend rate**

Worksheet 3: After-Tax Cash Flow

Net operating income	\$	<u>18,920</u>	[r]
<i>Less</i> annual interest payment		- <u>10,500</u>	[f]
<i>less</i> depreciation		- <u>5,082</u>	[t]
<u>Taxable income/loss</u>	\$	<u>3,338</u>	
x tax bracket	x	<u>35</u> %	[m]
<u>Tax savings (if <i>negative</i>) or tax liability (if <i>positive</i>)</u>	\$	<u>1,168</u>	[u]

Depreciation Calculation	
Improvement value	\$ <u>198,205</u> [d]
<i>Divided by</i> economic life	÷ <u>39</u> 27.5 or 39 yrs
Annual depreciation deduction	\$ <u>5,082</u> [t]

Your client may want to know:

$$\frac{\text{ATCF (v)} \quad \mathbf{4,224}}{\text{Equity (i)} \quad \mathbf{73,150}} =$$

after-tax equity dividend rate

Before-tax cash flow:	\$	<u>5,392</u>	[s]
<i>5.8% Add tax savings or subtract tax liability:</i>		+/- <u>-1,168</u>	[u]
After-tax cash flow:	\$	<u>4,224</u>	[v]

Purchase price:	\$	<u>280,000</u>	[a]
Factor from Table A	x	<u>1.159</u>	
Projected sales price:	\$	<u>324,520</u>	[w]
Less cost of sale: [p ¹] <u>6</u> %	-	<u>19,471</u>	[p ²]
Realized sales price:	\$	<u>305,049</u>	
Less total acquisition	-	<u>283,150</u>	[c]
Capital gain	\$	<u>21,899</u>	
x max. cap gain tax (5%, 15% or 20%)	x	<u>20</u> %	
Capital gain tax due	\$	<u>4,380</u>	
Add deprec recap tax	+	<u>6,353</u>	
Tax due from sale*	\$	<u>10,733</u>	[x]

Use Table A and look up the factor for

3 % ann. appreciation rate [o]

5 yrs holding period [n]

1.159 factor

Depreciation Recapture

5,082 depreciation [t]

x 5 holding period [n]

= \$ 25,411 total depreciation

x 25% deprec. recap. tax rate

\$ 6,353 depreciation recap. tax

Projected sales price	\$	<u>324,520</u>	[w]
Less sales costs	-	<u>19,471</u>	[p ²]
Less mtg. balance	-	<u>192,840</u>	[*]
Less tax due	-	<u>10,733</u>	[x]
Net after-tax sales proceeds	\$	<u>101,476</u>	[y]

*Note: If sellers receive cash from the sale of their investment, the tax cannot be postponed. Sellers should consider a 1031-tax-deferred exchange before selling for cash.)

*instructor will provide or use amortization table

Worksheet 5: Performance Summary

<i>After-tax cash flow:</i>	\$	<u>4,224</u>	[v]	
<i>Factor from Table B</i>		<u>x 5.204</u>		
Amount accumulated:	\$	<u>21,982</u>		
 <i>Plus net after-tax proceeds from sale</i>	+	<u>101,476</u>	[y]	
 Total future wealth: [FV]	\$	<u>123,458</u>	[z]	

Use Table B and look up the factor for

<u>2</u>	%	inv. after-tax rate
		of return [q]
<u>5</u>	yrs	holding
		period [n]
<u>5.204</u>		factor

What *percentage return* on investment would the investor have received in order to have earned the **total future wealth** (above) after investing the **initial investment** (i) for the **holding period** (n)?

Guess the rate of return. You may have to try several factors from Table A as a multiplier to approximate the following: Initial investment x factor = total future wealth.

Initial investment: \$ 73,150 [i]

Factor x ? =

Total future wealth: 123,458 [z]

(SHORTCUT: divide the total wealth by the initial investment; the result will be the Factor; then look at Table A and go down the column for years to find the holding period; then go across that row to find the closest factor you can find in that row. The result is the approximate FMRR).

Use Table A and look up the factor for

? % 5 yrs
rate holding period [n]

_____ factor

Try different rates. The one that gets you closest to the amount for total future wealth [z] is the approximate FMRR.

Financial Management Rate of Return (FMRR) a little over 11%

Let's look at my Excel spreadsheet.

Excel spreadsheet titled "FMRR BOOK REVISED OTT Feb 2017 v1 - Excel" showing a "Property Summary" and an "Amortization table".

Property Summary

Worksheet 1	Property Summary			
3/10/2018 13:19	Worksheet for Calculating FMRR			
Property Address	111 Condo Drive	Date:	Today	
Investor	Ott			
Purchase price:	\$175,000 [a]			
Add closing costs	\$3,500 [b]			
Total acquisition cost:	\$178,500 [c]			
%age that can be depreciated	80%			
Depreciable bldg/costs basis	\$142,800 [d]			
Pct of purchase price financed	70%			
1st mortgage: [e]	\$122,500	Interest (approx)	\$4,900	[f]
Interest rate	4.00%	Principal (approx)	\$2,118	[g]
Term years	30	Debt Service	\$7,018	[h]
Down payment	\$52,500			
Add closing costs	\$3,500 [b]			
Initial investment	\$56,000 [i]			
Gross monthly income	\$1,200	\$14,400	yearly gross inc.	[j]
Annual vacancy rate	5%	\$720	vacancy loss	[k]
Annual expenses				

Amortization table

Month	Payment	Interest	Principal	Bala
0				\$122,500
1	\$584.83	\$408.33	\$176.50	\$122,323.47
2	\$584.83	\$407.74	\$177.09	\$122,146.38
3	\$584.83	\$407.15	\$177.68	\$121,968.75

FMRR assumes: (pp. 94-95)

- long-term wealth building
- exclusion of other tax deductions (e.g, state tax deductions)
- tax bracket stability
- current tax provisions are in effect
- constant appreciation
- positive cash flows are reinvested
- BE CAREFUL: the FMRR model tends to make leveraging very attractive; always compare with cap rate.

Responsibilities of Real Estate Professionals

(pp. 95-97)

- obtain the skills required to analyze and compare alternative investment properties
 - Take a 1031 Tax-deferred Exchange course with an expert (try CLE or CCIM courses) and/or buy Tom Mahlum's book *Understanding 1031 Tax Deferred Exchanges*
- establish long-term relationships with clients who will buy and sell investment properties over time
- offer additional services to clients including property management

Responsibilities of Real Estate Professionals (*cont.*)

- evaluate the investor's financial and personal profiles and property attributes;
- provide appropriate information for investors in order to make decisions; but
- do *not* provide legal or accounting advice.

Stay in touch...



- www.debbietheteacher.com or
 - e-mail: *DebbieTheTeacher@gmail.com*
- I'll send you the spreadsheet within 24 hours.
Play with it!

Polling question:

Course evaluation

Course eval



Anonymous? ?

1.

What do you think of meeting this way?

Single Choice Multiple Choice

I like keeping my teachers and classmates at a distance. Tr

I prefer meeting the old-fashioned way. Thumbs down.

Sorry, I was sleeping. What's the question again?



It's always my pleasure to be your teacher.

Email:

DebbieTheTeacher@gmail.com

Website:

DebbieTheTeacher.com

Facebook: [DebbieTheTeacher](https://www.facebook.com/DebbieTheTeacher)

51 YEARS OF TEACHING