



Income Approach

- **Reserve for Replacements** – an operating expense for replacement of capital items such as roofs or HVAC equipment. These are expenses that do not occur every year but do need periodic replacement. It is assumed a prudent owner will take an amount from rent collections each year, deposit it in a reserve account, and pay for these types of expenses from the reserve account and not out of current year's collections.





Income Approach

- **Reversion** – right of possession returning to the landlord on the termination of a lease; value of the investment at the end of the holding period.
- **Sale-Leaseback** – a sale and subsequent lease given by the buyer back to the seller as a part of the same transaction.





Income Approach

- **Tenant** – a person who occupies/uses a property but does not hold title.
- **Time Value of Money** – the amount of money anticipated as future income is always worth less than an equal amount in hand at the present time.





Income Approach

- **Vacancy and Collection Loss** – a loss from potential gross income (PGI) caused by vacant space and failure to collect rents.
- **Yield Capitalization** – a capitalization method that uses a series of future incomes.





Income Approach

- There are two formulas which are used in the income approach to value:
 - 1. IRV formula**
 - Used in direct capitalization
 - Uses a rate to convert one year's income into value





Income Approach

2. VIF formula

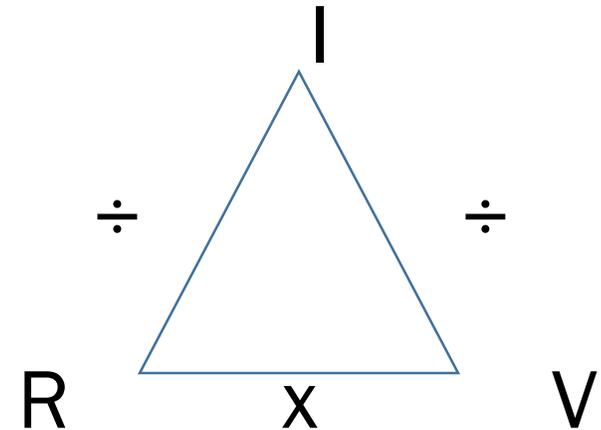
- Used in yield capitalization
- Uses a factor to convert all future years' income into value
- We will look at both formulas; however we will only be using the IRV formula for this class.





Income Approach

- IRV Formula
- $I = \text{Income}$
 - $R = \text{Rate}$
 - $V = \text{Value}$
 -
- In appraising income property, we use:
 - $I = \text{annual net operating income (NOI)}$
 - $R = \text{capitalization rate (OAR)}$
 - $V = \text{market value}$





Income Approach

IRV Formula

- I (Income) = $R \times V$
- R (Rate) = $I \div V$
- V (Value) = $I \div R$





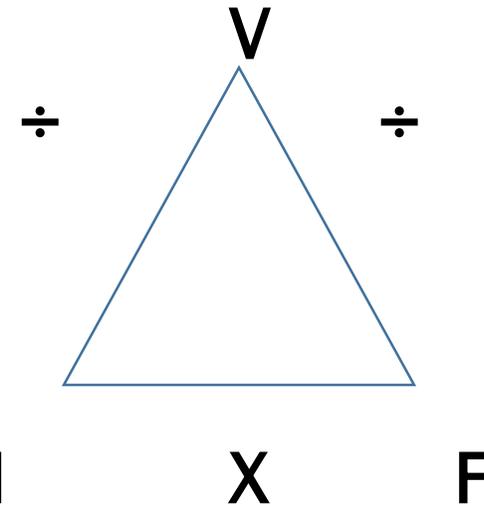
Income Approach

VIF Formula

V = Value

I = Income

F = Factor



In appraising income property, we use:

V = market value

I = annual Effective Gross Income (EGI)

F = compound interest factor





Income Approach

VIF Formula

- $V \text{ (Value)} = I \times F$
- $I \text{ (Income)} = V \div F$
- $F \text{ (Factor)} = V \div I$





Income Approach

- All we need to process the income approach to value are two things:
 - Net operating income (I)
 - Capitalization rate (R)
- Once we have these two items, we simply plug them into the IRV Formula to get the value of the property. $V = I \div R$





Income Approach

- The **Income (I)** we will plug into the IRV formula is the annual net operating income (NOI).
- It is developed by reconstructing an annual operating statement for the subject property.





Income Approach

- It is called a “reconstructed” operating statement because there are certain items the owner may report in the actual statement that are not considered by appraisers.
- In addition, the “reconstructed” statement shows what the property can expect to net based on market information.





Income Approach

Potential Annual Gross Income (**PGI**)
Less Annual Vacancy & Collection Loss (**V&C**)
Plus Miscellaneous Income (**Misc. I**)
Equals Effective Gross Income (**EGI**)
Less Operating Expenses (**EXP**)
Less Reserve for Replacements (**RR**)
Equals Net Operating Income (**NOI**)





Income Approach

- **Potential Gross Income (PGI)** – total market rent that a property could annually generate if it were 100% occupied.
- This is developed by looking to see what the market (comparable properties) are collecting for rent for the same type of space as the subject. It may, or may not, be equal to the subject's current rent (contract rent).





Income Approach

	Efficiency	1 BR	2 BR	3 BR
Subject	\$250	\$400	\$550	\$650
Comp 1	\$250	\$450	\$600	\$700
Comp 2	\$250	\$450	\$600	\$725
Comp 3	\$225	\$450	\$600	\$725
Comp 4	\$250	\$450	\$600	\$725
Mkt. Rent	\$250	\$450	\$600	\$725





Income Approach

- We would then apply the market rent to the number of units in the subject property to get its potential gross income (PGI).





Income Approach

- Efficiency 10 apts. @ \$250 = \$ 2,500
 - 1 BR 40 apts. @ \$450 = \$18,000
 - 2 BR 40 apts. @ \$600 = \$24,000
 - 3 BR 10 apts. @ \$725 = \$ 7,250
 - Totals 100 apts. \$51,750
-
- \$51,750 x 12 months = \$621,000 PGI





Income Approach

- Turn to Problem 1, Development of Potential Gross Income, and determine the amount of PGI you will use in the reconstructed operating statement for the Gateway Shopping Center.



Level II
Class Problem # 1
Development of Potential Gross Income

You are appraising a neighborhood strip shopping center known as Gateway Shopping Center. The leases with the tenants were entered into at various times over the past five years. The current rent roll follows:

Tenant	Leasable Area	Annual Rent
Kathy's Cards and Gifts	2,500 SF	\$ 37,500
Sports Galore	2,500 SF	\$ 40,000
Deuce Hardware	4,000 SF	\$ 40,000
Palace Restaurant	3,000 SF	\$ 60,000
Mother Goose Shoes	2,000 SF	\$ 40,000
House of Beauty	1,500 SF	\$ 37,500
Safe Insurance	800 SF	\$ 14,400
Vacant Retail Space	2,500 SF	\$ 0
	18,800 SF	\$ 269,400

You have researched the market and found recently negotiated rents for competing shopping centers run \$25.00/SF for space regardless of size or build outs.

What Potential Gross Income (PGI) will you use in your reconstructed operating statement for the Gateway Shopping Center?



Level II
Class Problem # 1 Answer
Development of Potential Gross Income

What Potential Gross Income (PGI) will you use in your reconstructed operating statement for the Gateway Shopping Center?

Tenant	Leasable Area	Market Rent	PGI
Kathy's Cards and Gifts	2,500 SF	\$ 25	\$ 62,500
Sports Galore	2,500 SF	\$ 25	\$ 62,500
Deuce Hardware	4,000 SF	\$ 25	\$ 100,000
Palace Restaurant	3,000 SF	\$ 25	\$ 75,000
Mother Goose Shoes	2,000 SF	\$ 25	\$ 50,000
House of Beauty	1,500 SF	\$ 25	\$ 37,500
Safe Insurance	800 SF	\$ 25	\$ 20,000
Vacant Retail Space	2,500 SF	\$ 25	\$ 62,500
	18,800 SF		\$ 470,000

OR

18,800	Times	\$ 25
		\$ 470,000

The Potential Gross Income is :

\$ 470,000





Income Approach

- **Vacancy and Collection Loss** – a loss from potential gross income (PGI) caused by vacant space and failure to collect rents.
- Most properties suffer some vacancy loss if for no other reason than tenant turnover. Therefore, in reconstructing the operating statement, we give an allowance for vacancy and for the inability to collect rents that are due.





Income Approach

- This is developed by looking to see what the market (comparable properties) are incurring as a vacancy and a collection loss rate. It may, or may not, be equal to the subject's current collection loss (contract rent).





Income Approach

- To calculate a vacancy rate, you divide the number of vacant units by the total number of units for each property, subject and comparables, to get a vacancy rate (percentage) for each property.
- For example, if you have 6 vacant units in a 120 unit building, your vacancy rate is 5% ($6 \div 120 = .05 \times 100$)





Income Approach

- Determine a vacancy rate for each comparable property. Once you have calculated a vacancy rate for each of the comparables, you will then calculate the median vacancy rate by using each of the comparables.





Income Approach

- The Collection Loss Rate works the same way.
- Divide the Uncollected Rents by the Rents Receivable. The percentage is the Collection Loss Rate for that property. You will then calculate the median collection loss by using the collection loss from each of the comparables.





Income Approach

- Now turn to Problem 2 – Development of Vacancy and Collection Loss Rate.
- Determine what Vacancy and Collection Loss Rate (total) you would use.



Level II
Class Problem # 2
Development of Vacancy and Collection Loss

You have researched the properties that compete with the Gateway Shopping Center and have obtained the following information:

Property	Vacant Space	Total Leasable Area	Rents Receivable	Rents Collected
Riverton SC	1,200 SF	20,000 SF	\$ 475,000	\$ 469,775
Eagle Ridge SC	1,050 SF	18,000 SF	\$ 396,000	\$ 392,440
Chatham SC	1,600 SF	26,000 SF	\$ 524,000	\$ 518,760
Hyde Park SC	850 SF	14,000 SF	\$ 322,000	\$ 318,780
Gateway SC (Subject Property)	2,500 SF	18,800 SF	\$ 269,400	\$ 269,400

What Vacancy and Collection Loss Rate (V & C) will you use in your reconstructed operating statement for Gateway Shopping Center?



Level II
Class Problem # 2 Answer
Development of Vacancy and Collection Loss

What Vacancy and Collection Loss Rate (V & C) will you use in your reconstructed operating statement for Gateway Shopping Center?

Property	Vacant Space	Total Leasable Area	Rents Receivable	Rents Collected
Riverton SC	1,200 SF	20,000 SF	\$475,000	\$469,775
Eagle Ridge SC	1,050 SF	18,000 SF	\$396,000	\$392,440
Chatham SC	1,600 SF	26,000 SF	\$524,000	\$518,760
Hyde Park SC	850 SF	14,000 SF	\$322,000	\$318,780
Gateway SC (Subject Property)	2,500 SF	18,800 SF	\$269,400	\$269,400

Vacancy Rate Calculation

Property	Vacant Space	Total Leasable Area	Vacancy Rate
Riverton SC	1,200 SF	20,000 SF	6%
Eagle Ridge SC	1,050 SF	18,000 SF	6%
Chatham SC	1,600 SF	26,000 SF	6%
Hyde Park SC	850 SF	14,000 SF	6%
Gateway SC (Subject Property)	2,500 SF	18,800 SF	13%

Vacancy Rate Calculation

6%

Collection Loss Rate Calculation

Property	Rents Receivable	Rents Collected	Uncollected Rents	Rents Receivable	CL Rate
Riverton SC	\$475,000	\$469,775	\$5,225	\$475,000	1%
Eagle Ridge SC	\$396,000	\$392,440	\$3,560	\$396,000	1%
Chatham SC	\$524,000	\$518,760	\$5,240	\$524,000	1%
Hyde Park SC	\$322,000	\$318,780	\$3,220	\$322,000	1%
Gateway SC (Subject Property)	\$269,400	\$269,400	\$0	\$269,400	0%

Collection Loss Rate Calculation

1%

The total Collection and Vacancy Rate is:

7%





Income Approach

- **Miscellaneous Income** – income received by the property from sources other than the primary rent. For example, rental of the clubhouse for parties, income from vending machines or forfeited rent deposits.
- Estimated by looked at the historical operating statements for the property.





Income Approach

- Effective Gross Income (EGI) – potential gross income, less vacancy and collection loss, plus miscellaneous income. Following is an example of how to compute the EGI: Assume the Potential Gross Income is \$621,000, Vacancy and Collection Loss is 6% and no Miscellaneous Income. What is the EGI?

• PGI	\$621,000
• - V&C @ 6%	(37,260)
• + Misc. Income	<u>-0-</u>
• = EGI	\$583,740





Income Approach

- Now turn to Problem 3, Development of Effective Gross Income. You will use your answers from Problem 1 and 2 for this problem. Also assume miscellaneous income in the amount of \$5,000 annually for the Gateway Shopping Center.



Level II
Class Problem # 3
Development of Effective Gross Income

Use the information from Problems 1 and 2 and develop an Effective Gross Income (EGI). Also, historically the Gateway SC has miscellaneous income of \$5,000 annually. What is the Effective Gross Income (EGI) for the subject property?



Level II
Class Problem # 3 Answer
Development of Effective Gross Income

What is the Effective Gross Income (EGI) for the property?

Potential Gross Income (Problem 1)	PGI	\$470,000
Less: Vacancy and Collection Loss (Problem 2)	V & C (7%)	-\$32,900
Miscellaneous Income	Misc Inc	\$5,000
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Effective Gross Income	EGI	\$442,100

The Effective Gross Income for the subject property is: \$442,100





Income Approach

- Operating Expenses – costs of operating the property
- Expenses are divided into two categories:
 - **Allowable Expenses** – expenses that are ordinary and typical and are necessary to keep the property functional and rented competitively.





Income Approach

- **Improper Expenses** – expenses incurred in the ownership of income-producing property that are not used to calculate value in the income approach. These are not entered into the reconstructed operating statement.





Income Approach

- Allowable Expenses (EXP)
 - Management
 - Wages, Salaries and Benefits
 - Utilities
 - Materials & Supplies
 - Repairs and Maintenance
 - Insurance
 - Miscellaneous Expenses





Income Approach

- Improper Expenses
 - Depreciation
 - Debt Service
 - Income Taxes
 - Capital Improvements
 - Owner's Business Expenses
 - Property Taxes (NOTE: These are a proper expense, but in appraising for property tax purposes, they are accounted for in the capitalization rate)





Income Approach

- Calculating Allowable Expenses
- In calculating the proper expenses to put into the reconstructed operating statement for a property, you must compare the current expenses with past years' expenses, compare current expenses with those of comparable properties, and contact the owner/manager regarding expense items in question. Expenses, like other items in the income approach must be supported by market comparables.





Income Approach

- Now turn to Problem 4, Development of Allowable Expenses, and determine which will be used as “Stated”, which ones will have to be “Pro-rated” and which ones will fall into the category “Eliminate”.



Level II
Class Problem # 4
Development of Allowable Expenses

Given below is the statement of expenses for the Gateway SC as prepared by the owner's accountant. They are actual bank withdrawals and are assumed to be correct. In your analysis of the statement for appraisal purposes, you have decided that some items can be used as stated, others need to be eliminated, and some need to be pro-rated. Indicate with an "X" which items you would use as stated, pro-rated (over more than one year), or would eliminate from your reconstructed operating statement.

	<u>As Stated</u>	<u>Pro-Rate</u>	<u>Eliminate</u>
A. Management Fees	_____	_____	_____
B. Advertising	_____	_____	_____
C. Maintenance Personnel Salaries	_____	_____	_____
D. Maintenance Personnel Benefits	_____	_____	_____
E. Debt Service on Mortgage	_____	_____	_____
F. Water and Sewage Fees	_____	_____	_____
G. Electricity	_____	_____	_____
H. Gas for Heating	_____	_____	_____
I. New Roof	_____	_____	_____
J. Miscellaneous Repairs	_____	_____	_____
K. Supplies	_____	_____	_____
L. Casualty Insurance--3 year policy	_____	_____	_____
M. Liability Insurance	_____	_____	_____
N. Snow Removal	_____	_____	_____
O. Income Tax	_____	_____	_____
P. Donation, Christmas Gift Expense	_____	_____	_____
Q. Real Estate Taxes	_____	_____	_____



Level II
Class Problem # 4 Answer
Development of Allowable Expenses

Indicate with an "X" which items you would use as stated, pro-rated (over more than one year), or would eliminate from your reconstructed operating statement.

	<u>As Stated</u>	<u>Pro-Rate</u>	<u>Eliminate</u>
A. Management Fees	X		
B. Advertising	X		
C. Maintenance Personnel Salaries	X		
D. Maintenance Personnel Benefits	X		
E. Debt Service on Mortgage			X
F. Water and Sewage Fees	X		
G. Electricity	X		
H. Gas for Heating	X		
I. New Roof		X	
J. Miscellaneous Repairs	X		
K. Supplies	X		
L. Casualty Insurance--3 year policy		X	
M. Liability Insurance	X		
N. Snow Removal	X		
O. Income Tax			X
P. Donation, Christmas Gift Expense			X
Q. Real Estate Taxes			X





Income Approach

- **Reserve for Replacements** – an operating expense for replacement of capital items such as roofs or HVAC equipment. These are expenses that do not occur every year, but do need periodic replacement. It is assumed that a prudent owner will take an amount from rent collections each year, deposit it in a reserve account, and pay for these types of expenses from the reserve and not out of current year's collections.





Income Approach

- The reserves are actually allowable expenses that are pro-rated over the life of the capital item that has to be replaced periodically.





Income Approach

- They are calculated as follows:
 1. Estimate the economic life of the item.
 2. Estimate its replacement cost new (RCN)
 3. Calculate the percentage of reserve per year by dividing 100% by the economic life.
 4. Multiply the RCN by the % per year to get the amount of annual reserve.





Income Approach

- Example – Roof on an apartment bldg.
 1. Estimate the economic life – 20 years
 2. Estimate the RCN - \$20,000
 3. Calculate the percentage of reserve per year by dividing 100% by the econ. life – $100\% \div 20 = 5\%$
 4. Multiply the RCN by the % per year to get the amount of annual reserve $\$20,000 \times 5\% = \$1,000$





Income Approach

- Now, turn to Problem 5, Development of Reserve for Replacements and set up the reserve account as you would for the reconstructed operating statement and determine the amount of annual expense for these items.



Level II
Class Problem # 5
Development of Reserve for Replacements

The following are capital items on the Gateway SC that have to be replaced periodically.

The roof costs \$30,000 to replace and typically lasts 15 years.

The HVAC equipment lasts 20 years and costs \$20,000 to replace.

The parking lot has to be re-paved every 10 years at a cost of \$40,000.

The awnings and store fronts need updated every 15 years at a cost of \$50,000.

Set up the Reserve for Replacements Account that you will use in your reconstructed operating statement. Determine the annual expense for these items.



Level II
Class Problem # 5 Answer
Development of Reserve for Replacements

Set up the Reserve for Replacements Account that you will use in your reconstructed operating statement. Determine the annual expense for these items.

Item	Cost to Replace	Typical Life	Reserve
Roof	\$30,000	15	\$2,000
HVAC	\$20,000	20	\$1,000
Parking Lot	\$40,000	10	\$4,000
Store Fronts	\$50,000	15	\$3,333
Total			\$10,333

The total Reserve for Replacements would be : \$10,333





Income Approach

- **Expense Ratio** – ratio of expenses to gross income; expenses plus reserve for replacement divided by effective gross income.
- An expense ratio is a simplified way of determining total expenses and reserves without having to account for each expense item separately.





Income Approach

- An expense ratio is calculated as follows:

$$(\text{Expenses} + \text{Reserves}) \div \text{EGI} = \text{Expense Ratio}$$





Income Approach

- Now turn to Problem 6 – Development of Expense Ratio, and determine what percentage you will use in the reconstructed operating statement.



Level II
Class Problem # 6
Development of Expense Ratio

An expense ratio is the total allowable expenses, including reserves, stated as a percentage of Effective Gross Income. (EGI)

You have obtained the following information on properties comparable to the Gateway SC:

Property	EGI	Expenses	Reserve for Replacements
Riverton SC	\$469,775	\$135,330	\$15,000
Eagle Ridge SC	\$392,440	\$117,500	\$12,000
Chatham SC	\$518,760	\$148,000	\$18,000
Hyde Park SC	\$318,780	\$88,020	\$10,800

What expense ratio should you use in your reconstructed operating statement for Gateway SC?



Level II
Class Problem # 6 Answer
Development of Expense Ratio

What expense ratio should you use in your reconstructed operating statement for Gateway SC?

Property	Expenses	Reserve for Replacements	Total Expenses	EGI	Expense Ratio
Riverton SC	\$135,330	\$15,000	\$150,330	\$469,775	32%
Eagle Ridge SC	\$117,500	\$12,000	\$129,500	\$392,440	33%
Chatham SC	\$148,000	\$18,000	\$166,000	\$518,760	32%
Hyde Park SC	\$88,020	\$10,800	\$98,820	\$318,780	31%

The Expense Ratio to use is	32%
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Income Approach

Reconstructed Operating Statement

$$\begin{aligned} & \text{PGI} \\ & - \text{V\&C} \\ & + \text{Misc. I} \\ & \hline & = \text{EGI} \\ & - \text{Exp} \\ & - \text{RR} \\ & \hline & = \text{NOI} \end{aligned}$$





Income Approach

- If you turn to Problem 7, Reconstructed Operating Statement and use the information you developed in Problems 1,2, 3 and 6 you should be able to develop the statement. Use the formula on the preceding slide as your guide.



Level II
Class Problem # 7
Reconstructed Operating Statement

Using the information you developed for Problems 1, 2, 3, and 6, reconstruct an operating statement for the Gateway Shopping SC. Then develop its Net Operating Income (NOI).



Level II
Class Problem # 7 Answer
Reconstructed Operating Statement

Using the information you developed for Problems 1, 2, 3, and 6, reconstruct an operating statement for the Gateway Shopping SC. Then develop its Net Operating Income (NOI).

Potential Gross Income (Problem 1)	PGI	\$470,000
Less: Vacancy and Collection Loss (Problem 2)	V & C	-\$32,900
Miscellaneous Income	Misc Inc	\$5,000
Effective Gross Income	EGI	\$442,100
Less: Expenses (at 32%)	- Exp	(\$141,472)
Less: Reserves for replacements	in expenses	\$0
Net Operating Income	NOI	\$300,628

The subject property's net operating income (NOI) is: \$300,628





Income Approach

- Capitalization Rates express the relationship between income and value.
- Proper selection of a capitalization rate is necessary in order to produce a valid value estimate.
- A small difference in the capitalization rate will result in estimates of value differing by thousands of dollars.





Income Approach

- Capitalization Rate can be composed of various rate components. These components are:
 - Discount Rate – allows for return on the investment
 - Recapture Rate – allows for return of the investment
 - Effective Tax Rate – allows for payment of the property taxes on the investment





Income Approach

- **Discount Rate** – percentage that allows for return on the investment
- The discount rate reflects the compensation necessary to attract investors to give up liquidity, defer consumption, and assume the risks of investing. It is the rate of return on total property investment to meet investment requirements.

