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Financial Fundamentals

Part B

Friday, June 23, 2017

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About the Speaker

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President

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- Past NAA Chairman of Board – 2013
- NAA Education Institute President – 2008/2009
- Subject matter expert for CAM rewrite
- Subject matter expert for CAPS rewrite
- Regular contributor to *Rent and Retain* magazine
- Named Woman of Influence by the Indianapolis Business Journal – 2015
- AIT instructor for NAA
- Member of Apartment All Stars
- Contributor to the *Multifamily Housing* textbook
- Past President of Virginia Tech Property Management Advisory Board
- Past President of Ball State Property Management Advisory Board
- B.A. – University of Rochester (Chemistry)
- M.Ed. – Ohio University (University Administration)
- Past President Indianapolis IREM Chapter
- Adjunct faculty member – Virginia Tech and Ball State
- Named by IREM as a Woman Changing the Face of Real Estate - 2014

Property Valuation – Both Science and Art

Objectives

- Understand key financial terminology
- Calculate key investment benchmarks
- Evaluate properties using income capitalization
- Understand the relationship between Cap Rate and Value
- Identify the benefits of leverage

Key Performance Indicators

***OPERATIONAL*: (Part A)**

- Economic Occupancy
- Bad Debt Percentage
- Operating Expense Ratio
- Delinquency (A/R)
- Accounts Payable (A/P)
- Variance Percentages
- Breakeven Occupancy

***FINANCIAL*: (Part B)**

- Debt Service Coverage
- Loan-to-Value Ratio
- Return on Investment
- Cash-on-Cash Return
- Cap Rate
- Property Valuation
- Loan Analysis

Standard Pro Forma Statement

	Pro Forma Statement
	Gross Potential Income (GPI)
-	Loss to Lease
-	Vacancy and Collection Loss
-	Concessions
=	Total Rental Revenue (TRR)
+	Other Income
=	Effective Gross Income (EGI)
-	Operating Expenses (OE)
=	NET OPERATING INCOME (NOI)
-	Annual Debt Service (ADS)
-	Capital Expenditures (CE)
=	Before Tax Cash Flow (BTCF)

Rates of Return

- Real estate investment decisions are made by weighing risk and reward
- Various ratios are used to determine an investment's potential or actual performance.

Return on Investment – ROI

Also referred to as *Free-and-Clear Rate of Return*

Cash-on-Cash Rate of Return

Rates of Return

Return on Investment – ROI

Also referred to as *Free-and-Clear Rate of Return*

ROI = NOI ÷ Value

If a property generates NOI of $95,000 and was purchased for $1,000,000 then the ROI is:

$95,000 ÷ **$1,000,000 = 9.5%**

Cash-on-Cash Rate of Return

$/$% = BTCF ÷ Initial Equity

If the same property has ADS of $77,000 and initial equity is $200,000, the $/$% is:
$95,000 NOI - $77,000 ADS =
$18,000 BTCF ÷ **$200,000 = 9.0%**

Valuation

- ***Valuation***: Estimation of the worth of a property
- ***Market Value***: the price the asset would command in the open market
- ***Investment Value***: Specific to the requirements of the investor
- ***Replacement Value***: Cost to replace the asset

Income Capitalization Approach to Value

Income (I) ÷Rate (R) = Value (V)

Provides one-year projection of value

IRV Flipped

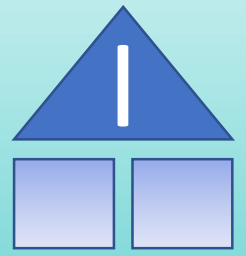
Income (I) ÷ Rate (R) = Value (V)

Therefore:

Income (I) ÷ Value (V) = Rate (R)

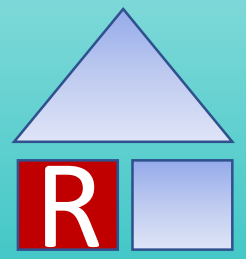
Rate (R) x Value (V) = Income (I)

Elements of IRV



Stabilized NOI (I)

Expected earning potential of the property in the absence of undue circumstances



Capitalization Rate (R)

Rate that converts a single year's income into value

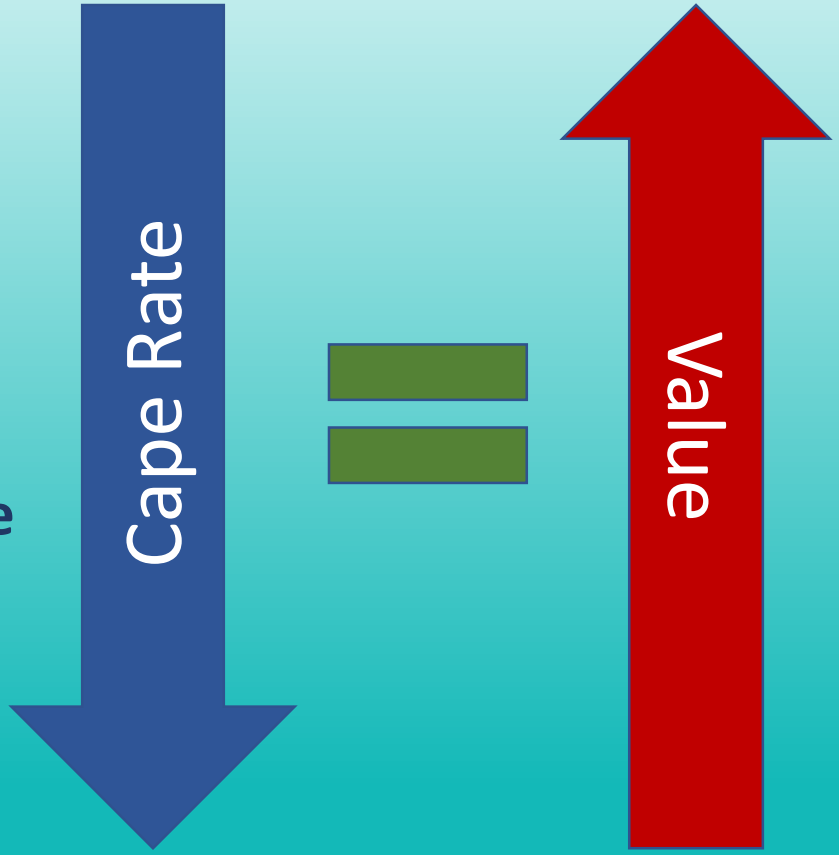
Value (V)

Value the property would get in a normal market

Cap Rate and Value

Calculating Rate: **Property generates $120,000 in NOI and sold for $1,500,000.**

$120,000 NOI ÷ $1.5 M Value = 8.0% Rate



Calculating Value:
Property generates $115,000 in NOI and similar properties yield a 10% return.

$115,000 ÷ 10% Rate = $1,150,000 Value

Equity Capitalization Approach to Investment Value

Cash-on-Cash Rate ($/$%) (R) = BTCF (I) ÷ Equity (V)

Therefore:

BTCF (I) ÷ Cash-on-Cash Rate ($/$%) (R) = Equity (V)

Finding Investment Value

Debt

$200,000 + $800,000

= $1,000,000

Equity Value + Loan Amount = Investment Value

Capitalization Recap

Type	Income Capitalized (I)	Rate Used (R)	Outcome (V)
Income Capitalization	NOI	Capitalization Rate Free-and-Clear Rate of Return (ROI)	Price/Appraisal
Equity Capitalization	BTCF	Cash-on-Cash Rate of Return Investor Desired Return	Equity Value + Loan Amount

Calculating Investment Value

- Loan Amount: $1,200,000
- BTCF: $22,000
- Required rate of return: 8%

Calculate what an investor would pay for the property:

BTCF (I) ÷ Cash-on-Cash Rate (R) = Equity (V)
$22,000 ÷ 8% = $275,000 Equity Value

Investment Value = Equity Value + Loan Amount
$275,000 + $1,200,000 = $1,475,000

Financing Basics

A ***mortgage*** or ***deed of trust*** is a legal instrument used to provide security.

Promissory Note

- Indicates a promise to pay back the lender
- Lays out in detail the payment terms, interest rate, and other conditions of the loan.

Mortgage

- Pledges the real estate as collateral for the loan
- Collateral is any property pledged for payment of a loan and is said to secure the loan.

Costs of Borrowing Money

Application Fees	**Loan (Discount) Points**	**Legal Expenses**	**Title Review**
Title Insurance	Credit Report	Survey Costs	Property Inspections
Environmental Audits	Engineering Reports	Mortgage Broker Fees	Appraisal Report
Closing Costs			

One basis point = 0.01% (1/100th of a %) or 0.0001

100 basis points = 1%

How Interest Rates Are Established

Prime Rate

- Index set periodically by banks
- Wall Street Journal publishes prime rate of largest banks

LIBOR

- Rates at which banks lend unsecured funds to other banks in London wholesale money market (London Inter Bank Offered Rate)

10-Year Treasury Note

- Debt obligation issued by U.S. government that matures in 10 years

Yield Maintenance

- Requires the borrower to pay a penalty in the event of prepaying a loan balance
- Yield maintenance fee

If the rate on an existing loan is higher than market rate of new loans at time of payoff, yield maintenance can be substantial.

If the rate on new loans is higher than rate on existing loan at time of payoff, yield maintenance could be zero.

Amortization

- Process of paying off principal as part of loan payments over the life of the loan
- Amortization schedule displays:
  - Amount of principal paid
  - Amount of interest paid
  - Loan balance after each loan period

Loan principal amount	$175,000.00	Annual loan payments	$13,971.36
Annual interest rate	7.000%	Monthly payments	$1,164.28
Loan period in years	30	Interest in first calendar year	$12,193.68
First year of loan	2007	Interest over term of loan	$244,140.80
First month of loan	January	Sum of all payments	$419,140.80

Year	Month	Beginning Balance	Payment	Interest	Cumulative Principal	Cumulative Interest	Ending Balance
2007	Jan	$175,000.00	$1,164.28	$1,020.83	$143.45	$1,020.83	$174,856.55
	Feb	$174,856.55	$1,164.28	$1,020.00	$287.73	$2,040.83	$174,712.27
	Mar	$174,712.27	$1,164.28	$1,019.15	$432.86	$3,059.98	$174,567.14
	Apr	$174,567.14	$1,164.28	$1,018.31	$578.83	$4,078.29	$174,421.17
	May	$174,421.17	$1,164.28	$1,017.46	$725.65	$5,095.75	$174,274.35
	June	$174,274.35	$1,164.28	$1,016.60	$873.33	$6,112.35	$174,126.67
	Jul	$174,126.67	$1,164.28	$1,015.74	$1,021.87	$7,128.09	$173,978.13
	Aug	$173,978.13	$1,164.28	$1,014.87	$1,171.28	$8,142.96	$173,828.72
	Sep	$173,828.72	$1,164.28	$1,014.00	$1,321.56	$9,156.96	$173,678.44
	Oct	$173,678.44	$1,164.28	$1,013.12	$1,472.72	$10,170.08	$173,527.28
	Nov	$173,527.28	$1,164.28	$1,012.24	$1,624.76	$11,182.32	$173,375.24
	Dec	$173,375.24	$1,164.28	$1,011.36	$1,777.68	$12,193.68	$173,222.32

Year	Beginning Balance	Payment	Principal	Cumulative Principal	Cumulative Interest	Ending Balance
2008	$173,222.32	$13,971.36	$1,906.07	$3,683.75	$24,258.97	$171,316.25
2009	$171,316.25	$13,971.36	$2,043.97	$5,727.72	$36,186.36	$169,272.28
2010	$169,272.28	$13,971.36	$2,191.73	$7,919.46	$47,965.98	$167,080.54

Loan Analysis: Loan-to-Value Ratio (LTV%)

- Certain ratios determine a loan's risk level
- LTV% is the ratio of the loan amount to appraised value
- Ensures that the property is worth more than the loan amount
- Typical rates are between 65% and 85%
- The LTV ratio is expressed as a percentage. The lower the LTV%, the lower the risk.

LTV% = Loan Amount ÷ Property Value

Loan Analysis: Loan-to-Value Ratio (LTV%)

- A building has been appraised at $980,000
- Lender A: LTV ratio of 75%, 25-year term at 7%
- Lender B: LTV ratio of 80%, 30-year term at 8%

Calculate the loan amounts. Which is riskier?

Loan A: $980,000 x 75% = $735,000
Loan B: $980,000 x 80% = $784,000

Loan B would be considered riskier due to the higher loan amount on the same value of property.

Loan Analysis: Debt Coverage Ratio (DCR)

- Compares the annual Net Operating Income (NOI) to the Annual Debt Service (ADS) of the loan
- Indicates the investment's capacity to repay the loan
- The closer the DCR is to 1.0, the higher the risk is to the lender.

DCR = NOI ÷ ADS

Loan Analysis: Debt Coverage Ratio (DCR)

- **Calculate the DCR of each loan. From the lender perspective, which is less risky?**

Loan A		Loan B
NOI = $78,400		NOI = $78,400
ADS = $62,338		ADS = $69,033
DCR = 1.26		DCR = 1.14

Loan Analysis: Maximum ADS

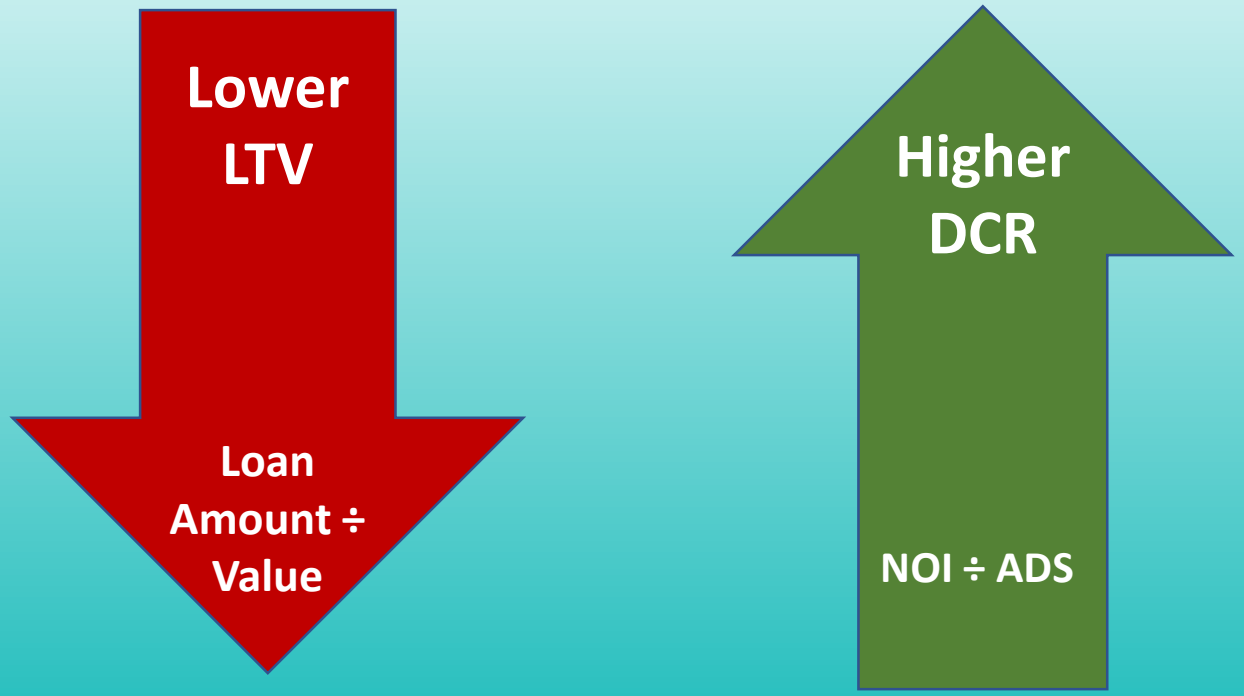
- Flipping the DCR formula gives us the maximum ADS the lender will finance
- The ADS is an annual number – divide by 12 to solve for monthly debt serve.

Maximum ADS = NOI ÷ DCR

- If a property has an NOI of $78,400 and the lender requires a DCR of 1.2, what is the amount of ADS this property can support?

Maximum ADS = $78,400 ÷ 1.2 = $65,333

LTV% and DCR



Lower Risk
Better for Lender

The Benefits of Leverage

	Free-and-Clear	Financed with 30-year, 9.25% loan
Cost of Property - Loan = Equity	$750,000 - 0 = $750,000	$750,000 - $600,000 = $150,000
NOI - ADS = BTCF	$83,000 - 0 = $83,000	$83,000 - $59,233 = $23,767
Rate of Return (ROI)	$83,000/$750,000 = 11.1%	$83,000/$750,000 = 11.1%
Cash-on-Cash Return	$83,000/$750,000 = 11.1%	$23,767/$150,000 = 15.8%
Loan Constant (k%)	Positive Leverage →	$59,233/$600,000 = 9.9%

QUESTIONS and COMMENTS

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