

Real Estate Investment Analysis

Fall 2003

Midterm Exam 1 – Version A

Dr. Stanley D. Longhofer

Tu-Th 11:00-12:15

You have 1 hour and 15 minutes to complete this exam. I know its long; don't worry, just do the best you can in the time allotted. I would spend a few minutes looking it over before you begin; start with the questions you know best and work on the others last. The number of points for each question is intended to indicate how much time you should spend on each. This weighting incorporates both the time it should take you to answer the question and its relative importance.

I've tried to eliminate any ambiguity about how to interpret the questions on the exam. Nevertheless, if you make any assumptions not explicitly stated in the questions, make sure you write them down so I can see what you are doing.

Finally, *remember to show your work*. I can only give partial credit for incorrect answers if I can tell what you were trying to do.

- 1) (10 points) Ron is considering the purchase of an office property with a first-year expected NOI of \$1.5 million; this figure is expected to increase by 4 percent per year indefinitely.
 - a) (4 points) If Ron's required rate of return from an investment of this sort is 16 percent, how much should he be willing to pay for it?

 - b) (3 points) What is Ron's going-in cap rate if he pays this price?

- c) (3 points) Explain what accounts for the difference between Ron's required return and the going-in cap rate in this case?

2) (20 points) Ginny is considering investing in Class-B office building in Denver. The building has 180,000 square feet of gross leasable area. Of this, 40,000 square feet rent for \$35 per square foot (psf), 60,000 square feet rent for \$30.00 psf, while the remaining 80,000 square feet rent for \$25.00 psf. All leases in this building are gross leases. Currently, the average vacancy rate for similar office space in Denver is 7.50%. Annual operating expenses are expected to be 60 percent of *effective* gross income. The asking price for this property is \$22.6 million.

- a) (6 points) Write out the pro forma operating statement for this property. What is its expected net operating income?

- b) (3 points) At what cap rate is the seller offering this property?
- c) (4 points) Similar office buildings have recently been selling at an 9.50 percent cap rate. Based solely on a comparison of cap rates, does this appear to be a good investment at the current asking price? Explain.
- d) (4 points) Provide two specific reasons why the cap rate may be a misleading indicator of a property's true value as an investment. That is, what factors might cause you to change your answer in part (c) above?
- e) (3 points) If Ginny were to buy this property at a 9.50 percent cap rate, what price would she pay?

3) (10 points) Suppose that the recent hurricane on the East Coast had totally destroyed 13 million square feet of office space in suburban Washington, D.C.

a) Briefly explain what impact this would have on office rents and vacancy rates in the short run.

b) Now explain what will happen to office rents and vacancies over the long run.

4) (18 points) You are considering two possible lease structures for a building you own. This first is a net lease with steps. The base rent for this lease is \$18.00 per square foot (psf) in the first year, with steps of \$1.00 psf each year thereafter. The second is a gross lease with base rent of \$28 psf. Operating expenses are expected to be \$7 psf in the first year and increase by \$0.50 psf each year thereafter. Either of these leases will have a five-year term.

a) (5 points) Calculate the effective rent of the net lease with steps. Assume a discount rate of 12 percent.

b) (5 points) Calculate the effective rent of the gross lease using the same discount rate.

c) (4 points) Which of the two leases entails the most risk for the landlord. Explain.

d) (4 points) Based on your answers to parts (a) through (c) above, which lease option would you choose? Explain your answer.

- 5) (10 points) Harry needs to lease 3,000 square feet of usable area, and is considering two different buildings. The first building has a gross leasable area of 22,000 square feet with 2,000 square feet of common areas. The landlord of this building is asking \$8.00 per square foot (psf) of rentable area. The second building has a gross leasable area of 30,000 square feet with 5,000 square feet of common areas; the asking rent for this building is \$7.50 psf of rentable area.
- a) (3 points) Calculate the load factor for the first building.
- b) (3 points) Calculate the load factor for the second building.
- c) (4 points) Assuming that the space being rented is otherwise identical, which option should Harry choose? Explain your answer.

6) (12 points) Hermione is purchasing an apartment complex for \$8.2 million. The appraised value of this complex is \$8.4 million. Wizards' Life is willing to provide 60 percent loan-to-value ratio financing under a 5-year balloon loan with 5.75 percent interest with monthly payments amortized over 20 years.

a) (3 points) What will be the annual debt service on this loan?

b) (3 points) How large will the balloon payment be at the end of the fifth year?

c) (3 points) If the first payment on this loan is on June 1st, how much total interest will Hermione pay during the first calendar year of the loan?

d) (3 points) How much total interest will Hermione pay during the second calendar year of the loan?

7) (14 points) Albus is considering investing in a property that has a first-year expected NOI of \$200,000; this figure is expected to increase by 5 percent per year for the indefinite future. At the end of 5 years, Albus expects to sell the property at a 12 percent terminal cap rate. Albus' required rate of return on this investment is 15 percent.

a) (8 points) Write out the expected total cash flows from this investment over Albus' expected holding period.

b) (3 points) How much should Albus be willing to pay for this property?

c) (3 points) If he pays this price, what is Albus' going-in cap rate?

8) (6 points) Real estate space markets are typically segmented using three factors. Name these factors.