

Real Estate Investment Analysis
Fall 2002

Midterm Exam 2 – Version A – Solutions

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Tu-Th 11:00-12:15

- 1) (15 points) Asher is selling an apartment building in Columbus. According to the terms of the purchase contract, Asher will receive a \$200,000 cash down payment and will carry a \$400,000 one-year note with 15 percent interest (the entire principal balance plus interest are due one year from now). The buyer will also assume Asher's existing first mortgage balance of \$400,000. Asher's adjusted tax basis in this property is currently \$600,000, and he will incur transaction costs of 40,000.

- a) (2 points) What is the sale price for this transaction?

| | |
|---------------------|----------------|
| Cash down payment | \$200,000 |
| Purchase money note | 400,000 |
| Mortgage assumption | <u>400,000</u> |
| Total sale price | \$1,000,000 |

- b) (6 points) What is Asher's profit ratio on this transaction?

| | |
|------------------|----------------|
| Sale price | \$1,000,000 |
| – Costs of sale | 40,000 |
| – Adjusted basis | <u>600,000</u> |
| Gross profit | \$360,000 |

| | |
|--------------------|----------------|
| Sale price | \$1,000,000 |
| – Mortgage balance | <u>400,000</u> |
| Contract price | \$600,000 |

The profit ratio is therefore $360,000 / 600,000 = 0.60$.

- c) (2 points) What is Asher's realized gain on this transaction?

The total realized gain is simply the \$360,000 gross profit.

- d) (3 points) Calculate the gain Asher will recognize each year (this year and next year) on this transaction.

| | <u>0</u> | <u>1</u> |
|-----------------|-------------|-------------|
| Equity received | \$200,000 | \$400,000 |
| × Profit ratio | <u>0.60</u> | <u>0.60</u> |
| Recognized gain | \$120,000 | \$240,000 |

Notice that Asher's total recognized gain is equal to \$360,000, his total realized gain.

- e) (2 points) Will Asher have any other tax liabilities from this arrangement? Explain.

Yes. The interest payments received at date 1 will be taxable at the ordinary income tax rate.

- 2) (10 points) Gad owns an office building in Oklahoma City. This building has a fair market value of \$3.4 million. Gad's current mortgage balance is \$2 million, and his adjusted tax basis is \$1.5 million.

Gad would like to exchange this building for a shopping center in Tulsa owned by Reuben. The center has a fair market value of \$3 million. Reuben has an outstanding mortgage balance of \$2 million on this property, and his adjusted tax basis is \$1 million.

They would like to complete a tax-deferred exchange for these properties (assuming one another's mortgages), and each is able to put up cash to balance the equities (if necessary).

- a) (5 points) How much boot, if any, does Gad receive?

| <u>Gad Gives</u> | | <u>Gad Receives</u> | |
|------------------|------------------|---------------------|------------------|
| Property | \$3,400,000 | Property | \$3,000,000 |
| – Mortgage | <u>2,000,000</u> | – Mortgage | <u>2,000,000</u> |
| Equity | \$1,400,000 | Equity | 1,000,000 |
| | | + Cash boot | <u>400,000</u> |
| | | Total equity | \$1,400,000 |

| <u>Boot Received</u> | |
|----------------------|--------------|
| Cash boot | \$400,000 |
| Mortgage relief | <u>– 0 –</u> |
| Total boot received | \$400,000 |

- b) (3 points) What is Gad's realized, recognized, and deferred gain from this exchange?

| | |
|-------------------|------------------|
| Market value | \$3,400,000 |
| – Adjusted basis | <u>1,500,000</u> |
| Realized gain | 1,900,000 |
| – Recognized gain | <u>400,000</u> |
| Deferred gain | 1,500,000 |

- c) (2 points) Calculate Gad's substitute basis in his new property.

| | |
|------------------|------------------|
| Market value | \$3,000,000 |
| – Deferred gain | <u>1,500,000</u> |
| Substitute basis | \$1,500,000 |

- 3) (25 points) Benjamin is analyzing a 220,000 square foot retail shopping center in Denver for an investment group. Rents in this center next year (the first year of operations) are expected to average \$30 per square foot, and are expected to increase by 3 percent per year for the foreseeable future. The average vacancy rate for similar retail space is 8 percent, and the operating expense ratio for the center is 15 percent. The tax assessor's office currently estimates the value of the building to be \$40 million, with 15 percent of this value attributable to land. The asking price for this property is \$50 million, and acquisition costs are expected to be 5 percent of the purchase price.

Financing is available for up to 75 percent of the purchase price, with a 10-year balloon loan, 7.25 percent interest, monthly payments amortized over 20 years, and 2 discount points.

The property will be put in service on January 1, 2003. The expected holding period is 5 years (expected sale date of December 31, 2007), at which time it will be sold at a 10 percent cap rate (based on projected NOI for 2007). Transaction costs at the time of sale are expected to be 5 percent of the gross sale price.

Benjamin's investors are all taxed at the 35 percent rate on ordinary income, 25 percent for depreciation recapture, and 20 percent for long-term capital gains.

- a) Use the attached Cash Flow Analysis Worksheet to calculate expected NOI, before-tax cash flow, and after tax cash flow for the first year only. Use the space below to show your work. Remember I can only give you partial credit if I can follow your calculations, so please label them clearly.

See the accompanying spreadsheet.

- b) Complete the attached Alternative Cash Sales Worksheet to determine the sale proceeds after tax from the disposition of this property. Assume that projected NOI for the sixth year will be \$5,983,245. (Hint: Don't forget to calculate the tax savings associated with unamortized loan points.)

See the accompanying spreadsheet.

- c) If cash flow after taxes from operations in years 2 through 5 will be \$1,244,331, \$1,323,561, \$1,404,069, and \$1,469,100, calculate the after-tax NPV of this investment at a 12 percent discount rate. What is the after-tax IRR on this investment? Based on this analysis, is this a worthwhile investment for Benjamin's group?

See the accompanying spreadsheet.

Multiple Choice Questions (2 points each)

- _____ 1. You are selling a property for \$2.5 million. Your adjusted basis in the property is \$1.5 million and your transaction costs for the sale will be \$125,000. Your cost recovery allowances on this property have totaled \$500,000. What is your total gain on this sale?
- A. **\$875,000**
 - B. \$1 million
 - C. \$2 million
 - D. \$1.875 million
 - E. \$375,000
- _____ 2. How much of your gain in the last question is due to cost recovery (taxed at the 25 percent rate)?
- A. \$125,000
 - B. **\$500,000**
 - C. \$1 million
 - D. \$625,000
 - E. \$375,000
- _____ 3. How much of your gain in question 1 is due to appreciation (taxed at the 20 percent rate)?
- A. \$125,000
 - B. \$500,000
 - C. \$1 million
 - D. \$625,000
 - E. **\$375,000**
- _____ 4. Suppose you have active (salary) income of \$225,000. In addition you have one rental property that generated positive income of \$45,000 and a second rental property that generated a loss of \$25,000. You also have \$35,000 of unused passive losses that you have carried forward from prior years. Which of the following statements is most correct?
- A. **YOUR TAXABLE INCOME IS \$225,000 AND YOU HAVE A PASSIVE LOSS CARRY-FORWARD OF \$15,000.**
 - B. Your taxable income is \$235,000 and you have a passive loss carry-forward of \$35,000.
 - C. Your taxable income is \$270,000 and you have a passive loss carry-forward of \$60,000.
 - D. Your taxable income is \$210,000 and you have no passive losses to carry forward.
 - E. None of the above statements is correct.

For the next five questions, assume that the rental real estate loss allowance does **not** apply.

- _____ 5. Suppose you have \$100,000 in active (salary) income, \$50,000 in short-term portfolio income, and \$25,000 in passive income. What is your total taxable income?
- A. \$150,000
 - B. \$175,000**
 - C. \$125,000
 - D. \$75,000
 - E. \$250,000
- _____ 6. Suppose you have active (salary) income of \$135,000. In addition, you have one rental property that generated positive income \$50,000. A second rental property generated a loss of \$60,000. What is your total taxable income?
- A. \$135,000**
 - B. \$185,000
 - C. \$125,000
 - D. \$195,000
 - E. \$245,000
- _____ 7. In the previous question, what is your passive loss carry-forward to next year?
- A. Zero. All of my passive losses can be claimed against income this year.
 - B. \$10,000**
 - C. \$50,000
 - D. \$60,000
 - E. \$110,000
- _____ 8. Suppose you have active (salary) income of \$135,000. In addition, you have one rental property that generated a positive income \$30,000. A second rental property generated a loss of \$20,000. What is your total taxable income?
- A. \$135,000
 - B. \$165,000
 - C. \$145,000**
 - D. \$185,000
 - E. \$125,000

- _____ 9. In the previous question, what is your passive loss carry-forward to next year?
- A. **ZERO. ALL OF MY PASSIVE LOSSES CAN BE CLAIMED AGAINST INCOME THIS YEAR.**
 - B. \$10,000
 - C. \$30,000
 - D. \$50,000
 - E. \$20,000
- _____ 10. This year Dan will have salary income of \$110,000, and he has a rental property that will generate a loss of \$20,000. Dan is an “active participant” in this investment, so he is eligible for the rental real estate loss allowance. How much will this allowance be for Dan this year?
- A. \$25,000
 - B. **\$20,000**
 - C. \$5,000
 - D. \$15,000
 - E. \$10,000
- _____ 11. Robert has sold a property for \$800,000. The terms of the sale require the buyer to make principal payments of \$300,000 today, \$200,000 one year from today, and \$300,000 two years from today. (Assume Robert owns the property outright, with no mortgage.) If Robert’s profit ratio on this property is 80% and the capital gains tax rate is 20%, how much capital gains tax must Robert pay *this year* due to the sale?
- A. **\$48,000**
 - B. \$240,000
 - C. \$128,000
 - D. \$160,000
 - E. \$32,000
- _____ 12. In the previous question, what is Robert’s total realized gain on the sale?
- A. \$800,000
 - B. \$240,000
 - C. \$480,000
 - D. \$225,000
 - E. **\$640,000**
- _____ 13. True or **FALSE**: Real estate investments held in a partnership can qualify for the rental real estate loss allowance.

Consider the following information to answer the next 6 questions: You have purchased an apartment property with a \$2 million cash down payment and a \$4 million mortgage at 7.5 percent interest with a 20-year term and monthly payments. Total closing costs for the purchase included \$250,000 for due diligence and purchase expenses, and 2 points for the mortgage. The property is expected to generate NOI of \$600,000 per year. It will be put into service on January 1 of next year, and the first mortgage payment will also be due on January 1.

- _____ 14. What the initial tax basis for this property?
- A. **\$6.25 MILLION**
 - B. \$6.00 million
 - C. \$2.25 million
 - D. \$6.33 million
 - E. \$2.00 million
- _____ 15. If the total depreciable basis is \$5 million, what is the depreciation allowance for the first tax year?
- A. \$181,818
 - B. **\$174,242**
 - C. \$128,205
 - D. \$122,863
 - E. \$7,576
- _____ 16. If the total depreciable basis is \$5 million, what is the depreciation allowance in the second tax year?
- A. **\$181,818**
 - B. \$174,242
 - C. \$128,205
 - D. \$122,863
 - E. \$7,576
- _____ 17. How much will you be allowed to claim as amortized expenses in the first tax year?
- A. \$80,000
 - B. **\$4,000**
 - C. \$330,000
 - D. \$16,500
 - E. \$16,000

- _____ 18. How much will you be allowed to claim as an interest expense in the first tax year?
- A. **\$296,957**
 - B. \$89,727
 - C. \$289,991
 - D. \$300,000
 - E. \$294,000
- _____ 19. How much will you be allowed to claim as an interest expense in the second tax year?
- A. \$296,957
 - B. \$89,727
 - C. **\$289,991**
 - D. \$300,000
 - E. \$294,000
- _____ 20. You are purchasing a property for \$420,000. The tax assessor estimates the value to be \$400,000, with \$300,000 of the value attributable to improvements. A recent appraisal puts the value at \$500,000 with \$350,000 of the value attributable to improvements. What is the depreciable basis for this property?
- A. **\$315,000**
 - B. \$420,000
 - C. \$294,000
 - D. \$105,000
 - E. \$126,000
- _____ 21. **TRUE** or False: Special assessments are essentially treated like a mortgage for tax purposes.
- _____ 22. True or **FALSE**: Passive loss carry-forwards expire if they are not used within 5 years.
- _____ 23. **TRUE** or False: All else equal, an apartment property receives more favorable tax treatment than an office property.
- _____ 24. **TRUE** or False: You are taxed based on your recognized gain, not your realized gain.
- _____ 25. True or **FALSE**: You must acquire a new property and dispose of your old property simultaneously in order to have a tax deferred exchange.