RE 618 / Fin 618 – Real Estate Investment Analysis
Valuation Fundamentals II Lecture Notes

1) Valuing a property using ratios and multipliers
   a) Three methods:
      - Cap rates
      - Gross income multipliers
      - Net income multipliers

   b) What inputs do these methods use in order to estimate the property's value?

2) Discounted Cash Flow Analysis
   a) The value of any asset can be calculated as:

$$V_0 = \frac{NOI_1}{1+r} + \frac{NOI_2}{(1+r)^2} + \frac{NOI_3}{(1+r)^3} + \cdots + \frac{NOI_T}{(1+r)^T} + \frac{V_T}{(1+r)^T}$$
$$= \sum_{t=1}^{T} \frac{NOI_t}{(1+r)^t} + \frac{V_T}{(1+r)^T}.$$

   b) In order to estimate the value of the property in this way, you need to know what four things?
      -
      -

-
-

3) Estimating NOI
    a) Several issues should be considered when estimating future NOI:
        - Specific terms of the leases on the property
        - Growth in market rents
        - Operating expense growth
        - Capital expenditures and leasing costs

4) Estimating Reversion Values
   a) We will consider four basic ways of estimating the value of the property at the end of the holding period

      - Estimating terminal cap rates directly from sales transactions data
      - Developing terminal cap rates based on expected long-term cash flows
      - Simple percentage appreciation based on the purchase price
      - Percentage appreciation based on the initial market value

   b) Estimating Reversion Values using Comparable Sales Cap Rates
      - Use recent sales of properties to estimate a market cap rate that can be used to estimate the reversion value

        $V_T = NOI_{T+1} / R_T$.

      - What must you keep in mind when choosing comparable properties for this approach?

      - How will this affect R_T as compared to R?

c) Estimating Reversion Values using a Terminal Cap Rate Assuming Constant Income Growth

- If income grows at a constant rate after the end of the holding period, the terminal cap rate can be estimated as

$$R_T = r - g$$

- The estimated reversion value is therefore

- What is r in this formula?

- Do the cash flows always need to be a growing perpetuity in this method?

d) Estimating Reversion Values Assuming Percentage Appreciation on the Purchase Price

$$V_T = P_0(1+G)^T$$

- What is the advantage of this approach?

- What is the problem with this approach?

e) Estimating Reversion Values Assuming Percentage Appreciation off of the Property's Market Value

- Key question: How do you know the property's market value if you don't know the reversion value?

- Recall that the value of the property is

$$V_0 = \sum_{t=1}^{T} \frac{NOI_t}{(1+r)^t} + \frac{V_T}{(1+r)^T}$$

$$V_0 = \sum_{t=1}^{T} \frac{NOI_t}{(1+r)^t} + \frac{V_0(1+G)^T}{(1+r)^T}$$

$$V_0\left(1-\left(\frac{1+G}{1+r}\right)^T\right) = \sum_{t=1}^{T} \frac{NOI_t}{(1+r)^t}$$

$$V_0 = \sum_{t=1}^{T} \frac{NOI_t}{(1+r)^t} \times \frac{1}{1-\left[(1+G)/(1+r)\right]^T}$$

5) Investment Analysis
   a) The property's current value can be estimated as what?

   b) If you know the purchase price, what investment measures can and should you estimate?