

**RE410 - Homework 4**  
**Due : October 29, in class**

*As usual, presentation will count for 5 points.*

**Problem 1 (50pts)**

1. Reproduce exhibit 11-3 (on page 246 in my version of the book) in Excel.
2. Assume that you require an IRR of 15% in PBTCF terms on this sort of property. How much are you willing to pay for this property?
3. Calculate the effect on the going-in IRR at a selling price of \$2,000,000 of the following changes in assumptions. Consider one change at the time, all other assumptions remain exactly the same in each case:
  - (a) Market rents will grow at 2%
  - (b) After year 1, the probability that tenants will renew when leases expire rises to 75%
  - (c) The lease in space 1 has a “stop” of 1\$/SF (This only affects the first lease on space 1, nothing else)
  - (d) The going-out cap rate falls to 8%

**Problem 2 (45pts)**

An investor is considering purchasing a property for \$1,000,000 (=original basis), holding it for two years and selling it at the end of year 2. The property’s depreciable cost basis is \$800,000, and the depreciation schedule for this property is straight-line with a 27.5 years useful life. The property’s Potential Gross Income is \$100,000 for all years, and the occupancy rate will be 90% over the holding period. Operating expenses are expected to be \$10,000 in both years, while capital expenditures and other income are zero throughout.

The investor expects to be able to sell the property after two years for \$1,000,000 (= net sale price.) Her income tax rate is 20%, the capital gains rate is 15%, and the depreciation recapture tax rate is 20%. As for financing, she obtained approval for a

10-year fixed rate mortgage with contract rate 10% and yearly payments. The initial balance on the loan is such that the Debt Coverage Ratio is 120% (1.2) in the first year.

1. What is the loan's original balance?
2. Compute the Equity-After-Tax-Cash-Flows (EATCF) associated with this project over the first two years, both from operations and from reversion.
3. The investor requires a return of 10% from this sort of levered equity investment. Should they purchase this property at a price of \$1,000,000?