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11.433J / 15.021J Real Estate Economics
Fall 2008

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FINAL EXAM

[1 1/2 hours, answer all questions, **weights are indicated**]

1). (20 points) A recent research study on the "value" of good design had an architectural board rate the quality of the exteriors of the office buildings in downtown Chicago. The study then found statistically that those buildings with "higher" ratings had rents that were on average 15% higher. However, the study went on to uncover that the construction costs of these "better" designed properties was 20% higher. It concluded that "good design does not pay for itself and the city of Chicago would be wasting its money to encourage it".

Is there anything wrong with this study and with this answer?
What research would you undertake to answer the question?

2). (20 points) You are comparing investing in two apartment properties in different markets. Property A has an annual turnover of tenants of 30% which is felt to be typical of that market, and the manager reports that it takes an average of 4 months to release units. Property B has turnover of 20% with releasing averaging 6 months. In your investment pro forma what should you assume for annual vacancy in estimating each property's income?

3). (30 points) Congress at various times has contemplated eliminating the mortgage interest deduction for owner occupied housing. Suppose this were enacted.

a). Trace out the impact on home prices over time assuming that market prices for housing are forward looking (once the enactment is announced). Use a dynamic stock flow type of analysis for the single family housing market to illustrate your answer with time-graphs (no math).

b). Also trace out the impact over time on construction and the stock of owner-occupied housing. (using the same graphical analysis]

c). Switching over to the rental apartment market, what would happen over time to apartment rents, new construction and the stock of rental units.

[Use graphs and not equations to illustrate the impacts]

4). (30 points) As an industrial REIT you operate in two markets. To better understand the movement of rents in each of your markets, you gather some data and statistically estimate the following relationship between vacancy and rents. Each market currently has 8% vacancy ($V=8.0$) and \$6 rents.

$$\text{Market A:} \quad R_t = 1.2 - .05 V_{t-1} + .9 R_{t-1}$$

$$\text{Market B:} \quad R_t = 2.0 - .10 V_{t-1} + .8 R_{t-1}$$

What will happen to rents in each market over the next few years if there is no change in the vacancy rate? Suspecting that new development will raise vacancy in each market by 4% (to $V=12.0$) next year what will happen in each market to rents? If the increase in vacancy remains "permanently", where will rents decrease the most after "many years have elapsed". Explain the differences.

Substitute for question for #2) on the make-up.

2). (20 points) As a portfolio manager, you notice that the volatility (standard deviation) of your retail shopping centers' income has been less than in previous decades. You also notice that the appraised values of the centers are exhibiting recent volatility similar to past decades. Questioning your accountant/appraiser, he says this is because the market is becoming more efficient in pricing. Do you agree? If so why?

