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11.433J / 15.021J Real Estate Economics
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FINAL EXAM

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

1). A suburban town currently has public services consisting solely of local schools. The town's characteristics are as follows

# students:	1000
expenditure/student:	6000
state aid/student:	2000
# homes:	2000
Average home value:	250000
Total nonresidential value:	100000000

The town is contemplating developing a particular parcel of land with one of the following two projects.

a). 200 homes, valued at 600000 each, with an estimated 200 new students.

b). A \$60000000 office park, that will require \$7000000 in new capital outlays by the town (financed with 10% bonds that never mature – hint: the 1/r rule).

What is the town's current tax rate? What would it be after each project? Which project will the town likely select and why?

2). Using a dynamic “stock-flow” model of commercial real estate analyze how both rents and prices each react to a positive demand shock, such as would occur if there was a sudden and unexpected increase in employment. Just Graph your answers – no need for equations. *What happens to the ratio of prices/rents.*

a). Your answers will depend on what you assume about price formation in the market. Conduct the analysis separately for the case where prices are perfectly informed and forward looking, as opposed to myopically backward looking.

3). Over the last 30 years, the Atlanta MSA has increased in population and employment by almost 200%. During this same period, the real price of housing (inflation adjusted) has risen only 15%. By contrast, the population and employment growth numbers for the Chicago MSA are 35% and the real house price inflation has been 85%. Using a 3-sector model of a region's economic growth, what explains these results. Why are there these differences?

4). You are comparing two MSA hotels markets with an eye towards an investment. From STR and FW Dodge you obtain the following information.

	<u>Market A</u>	<u>Market B</u>
Current Rooms Available:	5,000,000	10,000,000
Rooms sold (2008)	3,500,000	8,000,000
Hotel rooms under construction (to be delivered in next 12 months):	1000	4000
Projected aggregate annual Regional GDP growth:	2%	4%
Average Daily Room Rate (ADR)	160	220

You know econometrically that the following relationship holds in the market place between the growth in room rates and occupancy:

$$ADR_t = 10 + 100 OC_t + .5ADR_{t-1}$$

- a). What is current occupancy in each market and how will it likely change over the next 12 months and what assumptions is this based upon? [express Occupancy (OC) as a fraction, e.g. 0.70]
- b). What are ADR's likely to be 12 months hence?