

## **Part 1 Quiz – Chapters 1 and 2**

### **Part 1. Multiple Choice Questions**

1. Which are the two fundamental markets in commercial real estate?

- (a) The space market and the asset market.
- (b) The space market and the money market.
- (c) The construction market and the land market.
- (d) The asset market and the stock market.

2. The term "real property" refers to:

- (a) Financial capital as opposed to physical capital.
- (b) Long-lived personal property, such as automobiles, musical instruments, works of art.
- (c) Land or built space.
- (d) Property valued net of inflation.

3. In a real estate market. "constrained supply", or rising real Long-Run Marginal Cost (upward-sloping supply curve), is generally caused by:

- (a) Inflation.
- (b) Technological improvements in the construction industry.
- (c) Scarcity of buildable land due to geographic or regulatory constraints.
- (d) Tenant requirements for more lavish accommodations.

4. The "real estate system" consists of the following three major components:

- (a) The space market, the capital market, and the mortgage industry.
- (b) The space market, the asset market, and the development industry.
- (c) The public equity market, the private equity market, and the debt market.
- (d) The capital market, the government, and land.

5. Long-run equilibrium in a DiPasquale-Wheaton "Four-Quadrant Model" (4QM) is found by:

- (a) The triangle connecting the current quantity of built space, the current price of property per square foot, and the current rent per square foot.
- (b) The square that equates supply and demand.
- (c) The rectangle with vertical sides and horizontal top & bottom whose four corners just touch the four binary relationship lines in each quadrant.
- (d) The diamond whose four corners are on the four axes at the current prices and quantities.

6. Equilibrium between current supply and demand in the space market is reflected by:

- (a) The prices (rents) and occupancy observed in the market.
- (b) The amount of new construction in process in the market.
- (c) The volume of properties bought and sold during the year.
- (d) A constant long-run marginal cost function.

7. Which of the following statements is true about equilibrium real rents (net of inflation) in the space market over time?

- (a) An increase in demand will necessarily produce an increase in rents, but a decrease in demand will not necessarily produce a decrease in rents.
- (b) An increase in demand will not necessarily produce an increase in rents, but a decrease in demand will necessarily produce a decrease in rents.
- (c) An increase in supply will necessarily produce an increase in rents, but a decrease in supply will not necessarily produce a decrease in rents.
- (d) An increase in supply will not necessarily produce an increase in rents, but a decrease in supply will necessarily produce a decrease in rents.

8. If the cap rates prevailing in a given market are 10.5%, then how much would you expect a property to sell for in that market if its annual net income were \$50,000?

- (a) \$5,250.
- (b) \$50,000.
- (c) \$476,190.
- (d) \$525,000.

9. Other things being equal, which would have the lowest cap rate?

- (a) A building with short-term leases in a declining market.
- (b) A building with long-term leases in a declining market.
- (c) A building with short-term leases in a stable market.
- (d) A building with long-term leases in a growing market.

10. In order for the real estate system to function more efficiently and effectively, it is important for:

- (a) Investors to try to forecast the economy, the space market, development activity, and the capital market.
- (b) Potential tenants to make their space needs explicitly known to developers.
- (c) Government regulators not to place too strict requirements on real estate developers.
- (d) Landlords to treat tenants fairly.

## Part 2. Short Answer Questions

Briefly describe about the following terms (1-3)

1. the 'replacement cost' level of rent

The level of rent that is just sufficient to stimulate profitable new development in the market

2. segmented market

Because both supply and demand are location and type specific, real estate space markets are highly segmented. That is, space markets tend to be local rather than national, and specialized around building usage categories. This is in contrast to nationally integrated markets for homogeneous commodities

3. MSA

MSAs, short for "metropolitan statistical areas", encompass a central city and its surrounding suburbs. Since an MSA tends to be relatively integrated economically, culturally, and socially, it is often used as the primary geographic units of space market segmentation in real estate.

4. If it costs \$300/SF to develop a new class A office building and the annual net rent for office space is \$22.5/SF, what is the cap rate that would make additional development feasible? Also, if office buildings are currently selling at an 8% cap rate, what would be the replacement cost rent level?

7.5%

\$24/SF

5. What would be the 'short-term' effect of an increase in demand for space usage on the following factors?

1) Rent go up

2) Price of real estate assets go up

3) New development increase

### Part 3. Additional Questions

1. In 2000 rents were \$18/SF and 10 Million SF of space were occupied in a certain market. By 2006 12 Million SF of space were occupied, and rents were \$19/SF, however, the CPI (inflation) had increased more than 20 percent over this period. In this market, it appears that:

- (a) Demand is growing while supply is constrained.
- (b) Demand and supply are both growing at about the same rate.
- (c) Demand is either not growing, or not growing as fast as supply.
- (d) Demand increased in response to higher real rents.

2. Which of the following is an example of the private equity market?

- (a) The commercial real estate property asset market.
- (b) The stock market.
- (c) The commercial mortgage market.
- (d) The money market.

3. In the absence of foresight among asset market participants, a growth in demand for real estate assets in the capital market, holding demand in the space usage market constant, will produce which of the following short-run and long-run effects?

- (a) A short-run increase in property asset prices followed by a subsequent drop.
- (b) A short-run decrease in property asset prices followed by a subsequent rise.
- (c) A short-run increase in rents followed by a subsequent drop.
- (d) A short-run decrease in rents followed by a subsequent increase.

Use the following information to answer the next 2 questions.  
Suppose demand for apartments in a metropolitan area is:

$$\#Apt.units = 60,000 + (0.30)(\# \text{ households}) - (80) * (\$Rent/unit/mo.)$$

4. If developers increase the number of apartment units from 88,000 to 100,000, over a period of several years, to what level will real rent fall in the market below the original \$400/mo level if the population remains stable at 200,000 households?

- (a) \$350
- (b) \$300
- (c) \$250
- (d) \$200
- (e) Cannot be determined from the information given.

5. In the question above, suppose the number of apartment units remained at 88,000 while the number of households grew from 200,000 to 220,000. To what level would real rents rise?

- (a) \$500
- (b) \$475
- (c) \$450
- (d) \$425
- (e) Cannot be determined from the information given.

6. Which statement below is true?

- (a) The supply side of the space market consists of investors.
- (b) The demand side of the space market consists of investors.
- (c) The supply side of the space market consists of potential tenants.
- (d) The demand side of the space market consists of potential tenants.

7. The basic geographic unit in real estate space markets is typically:

- (a) The country
- (b) The state
- (c) The county
- (d) The metropolitan area (MSA)

8. Real estate space markets are segmented for all of the following reasons except:

- (a) Space users require specific locations and types of buildings.
- (b) Built space is fungible.
- (c) Buildings cannot move.
- (d) It is difficult and expensive to change buildings from one usage type to another (e.g., from office to apartment).

9. If properties in a certain market are typically selling for prices of \$100/SF and they are yielding current annual net income of \$8/SF, then the typical "cap rate" prevailing in this market is:

- (a) \$12.50.
- (b) \$8/SF.
- (c) 8%.
- (d) Cannot be estimated from the information given.

10. The "kink point" in the real estate space supply function occurs at:

- (a) The current quantity of built space and the "replacement cost" rent.
- (b) The maximum quantity of built space allowed by zoning laws and geographical constraints.
- (c) The current quantity of built space and the current rent.
- (d) The rent that provides a cap rate equal to the mortgage interest rate.