

Study of Real Estate Markets

ECON 480

Spring 2010

I - Economic Concepts

Goods: vertical and horizontal differentiation

- Type: single family house, condo, townhouse, etc
- Size: sqft, #beds, # baths
- Style: Spanish, modern, etc
- Other characteristics of the good: age of property, new, renovated, pool, etc.
- Characteristics of the neighborhood: proximity to schools, shopping areas, commute to work, etc.

→ Description of the distribution of properties for sale (the sample should represent this)

Buyers: preferences

- Different buyers have different preferences depending on their age, their needs (e.g. family with children vs. young couples, etc), their taste (e.g. taste for large units, or for a given architecture)
- Different buyers have different levels of patience (some want to buy quickly), different 'search costs' (some want to visit only a few houses)
- Different buyers face also different financial constraints (the level of income determines which type of property can be afforded). This is related to mortgages.
- Willingness to pay for a property depends on the match between the characteristics of the good (parameters of vertical and horizontal differentiation) and the preferences/constraints
- Buyers have outside options: rental market, properties in other neighborhoods when considering buying a given property
- Buyers face costs: property tax is one important related cost.

Sellers: preferences

- Sellers' outside option is to keep their property. A possible option is therefore to wait to sell.
- Sellers are concerned about the price at which they sell as well as the date at which they sell

- Sellers may be more or less patient, or more or less motivated (due to constraints to repay mortgage, leave the city etc)

Expectations

- A buyer may decide to wait to make an offer on a given property if he expects the price to go down [provided the property is still on sale in the future]. Or, a buyer may decide to not bid on a property if he expects the price of other similar properties to go down in the future.
- A seller may decide to wait to accept offers. If he expects next buyers to offer higher prices, he may reject today's offer.

➔ The distributions of future properties for sale and future buyers on the market govern those expectations [some aspects of durable good problem to consider here]

Market:

1. Most sellers offer a single unit. Each seller chooses the price of the unit. Given vertical and horizontal differentiation, a model of *price competition with differentiated products* fits best. Note however:
 - The list price is set by sellers but the final price might differ following negotiations between buyers and sellers.
 - This is a dynamic process. Buyers arrive at different dates, they disappear if they do not trade and others arrive at later dates. In other words, a given seller does not face the entire demand for his property at a given point in time.
2. The list price is an indicator of the *supply*, and the final price is an *equilibrium outcome*. It means there was a buyer willing to buy at that price, but it does not say much about the demand for that particular property.
3. The timing of the process reflects search frictions (listing a property does not guarantee to attract an interested buyer right away, or 'demand' may arrive with a delay), expectations (buyers may delay making offers because they foresee price drops) and adjustments to expectations (sellers may decrease prices understanding this is their only chance to sell).
4. The equilibrium outcomes (e.g. final price, delay to sell, types of properties sold) and trends vary across neighborhoods. The characteristics of properties, buyers and financial constraints placed on buyers for instance affect them. For instance, neighborhoods in which high end properties are for sale attract high income buyers who are not limited by financial constraints. The effects of a recession may be therefore less important in such neighborhoods. The comparison between owning and renting is crucial in some other neighborhoods (rent control may be an important aspect).

NOTES:

- Mortgage conditions are important: the typical loan compared to the typical value of a property gives an idea about the ability of buyers to buy. For instance if prices are high requiring a high down payment, buyers may have difficulties to buy. This will affect the prices and perhaps the offer too.
- When evaluating the decision to borrow to buy, it is important to consider consequences for taxes (interest deductions,...)
- Property taxes: for new owners, they are a function of the price of the property. As the price increases, the yearly tax increases. This may be an issue in neighborhoods in which public schools are not very good. Some neighborhoods may not 'develop' as a consequence.

'Behavioral' strategies: Some economic agents use irrational strategies such as:

- Sellers tend to not decrease the price below the price at which they bought themselves in the past.
- Sellers wait too much to decrease the price
- Buyers accept mortgages they cannot afford

II - Data and stats

- Description of the distribution of properties for sale: through descriptive statistical analysis of the listings.
- Description of the composition of sellers and buyers: collection of demographic data, census...
- Buyers preferences are reflected in final prices: it is possible to run regressions to assess to which characteristics of the goods buyers are more sensitive to. What can be assessed depends crucially on the type of data you have for each transaction. Nevertheless, regressions make sense if the sample is large enough. Note that prices listed are correlated with final prices. If the final price is missing, it can be sometimes approximated to run a regression. In some markets, it is understood the final price should be equal to the listed price less a given rebate and sellers usually choose to list the assessed price plus that rebate. In that case, it is easy to construct a simulated final price.
- Sellers preferences and strategy (wait or sell) are reflected in the overall process starting with the first listing and ending with a transaction. If data are available, it is possible to determine how long it takes to sell, what changes occur in the listings (change in prices, list and delist) before selling. This information may be collected for individual properties (for example, for the properties of your sample) or obtained at the market level (e.g. median or average).
- Expectations are reflected also in the overall process (from listing to sale). For instance, price reductions reflects impatience or financial constraints. Waiting to sell may mean a few things: there are only a few buyers (it is difficult to find a match), the seller expects to find a better buyer in the future (e.g. someone finding his property unique and willing to pay more) or expects prices will increase (e.g. due to changes in market conditions, mortgages...). Choosing a list price above

the assessed price suggests the seller thinks his property does not satisfy the standard criteria (the value depends on sqft but also on other characteristics not used to compute the assessed price) and it is possible to find a buyer thinking the same.

- Behavioral strategies can be observed sometimes. For instance, a seller may list a property above the assessed value to make sure it is above the price at which he bought a few years ago. Or, price changes may reflect distress due to poor planning of the sale strategy.
- Market outcome: it is observed in the series of final prices (at aggregate or disaggregate levels), delays to sell, ratio sale / rent. Those vary by neighborhood, but also within neighborhoods for different types of properties. Those also vary through time. Time series exhibit cycles that may be meaningful (seasonality, recessions and booms, structural changes in the market).
- Structural changes: there may be radical differences after a change is introduced (relaxation of rent control, new tax advantages, ...). This can be seen in the price and sales times series.