Intermediate Microeconomics - The Market (Ch1)

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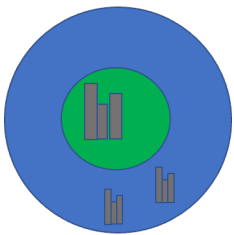
2026 Spring

Another Example: The Market for Apartments (Varian Ch1)

The Basic Setting



- Simple city with inner ring and outer ring
- The rent for an outer-ring apartment is given (p_0)
- We focus on the market of the inner-ring apartments

Apartment Market as a Microeconomic System

Environment

- Reservation Prices for the buyers (Demand) and sellers (Supply)

Institution (How to allocation)

1. Competitive market: one equilibrium price at p^E
2. Discriminating monopolist: multi prices, full information for the seller
3. Ordinary monopolist: one price, only know the demand curve
4. Rent control: one price lower than p^E

Agents' Strategy

- Rational strategy: the most profit/utility for the buyer/seller as they can

$\Rightarrow$ Economic Outcome (price? quantity? surplus?)

Environment: Demand Curve

The quantity demanded at each of the possible prices

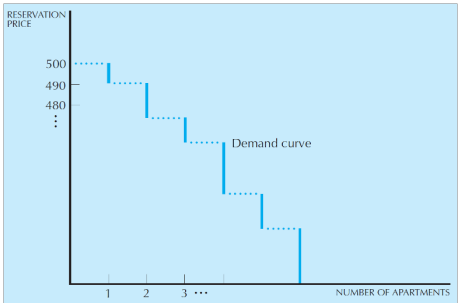


Figure 1: The discrete demand curve

- **Reservation price**(for buyer): maximum willingness to pay.
- Vertical axis: reservation prices.
- Horizontal axis: the number of people who are willing to pay each of these reservation prices.
- In general, the demand curve is sloping down: as the price of apartments decreases, more people will be willing to rent apartments.

Environment: Demand Curve

The Continuous Demand Curve

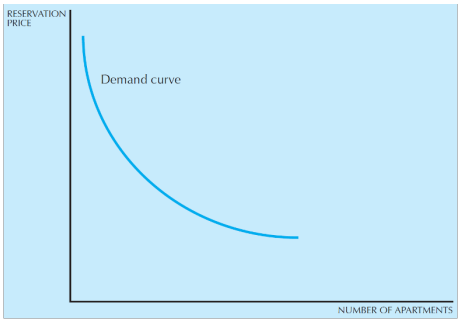


Figure 2: Continuous demand curve

- When there are a large number of buyers, the demand curve will take a smooth shape.
- The “jumps” shown in the previous figure are now so small relative to the size of the market.

Environment: Supply Curve (short run)

The quantity supplied at each of the possible prices

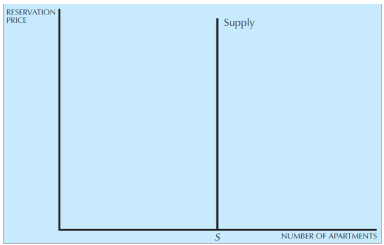


Figure 3: The supply curve

- In the short run, **after production**, the supply of apartments is fixed.
- The number of apartments is fixed. No destruction or more construction.
- Any (positive) price earns the seller profits.

Outcome with Institution 1 (Competitive Market)

The quantity supplied = quantity demanded

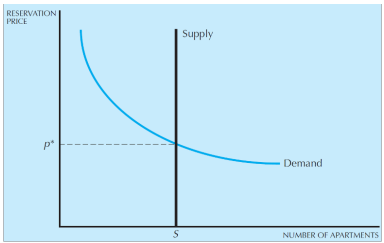


Figure 4: The competitive equilibrium

- p^*: equilibrium price, Quantity Demanded = Quantity Supplied
- if $p > p^*$: Quantity Demanded < Quantity Supplied. Landlords will lower the price to p^*.
- if $p < p^*$: Quantity Demanded > Quantity Supplied. Landlords will raise the price to p^*.

Outcome when the environment changes (Comparative Statics)

If supply of apartments is increased

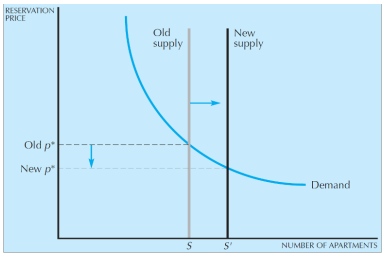


Figure 5: Supply increases

- More quantity supplied at a given price. Supply curve shifts to the right.
- As the supply of apartments increases, the equilibrium price decreases.
- Similarly, if the supply of apartments were reduced the equilibrium price would rise.

Outcome when the environment changes (Comparative Statics)

If supply decreases because of demand decreases

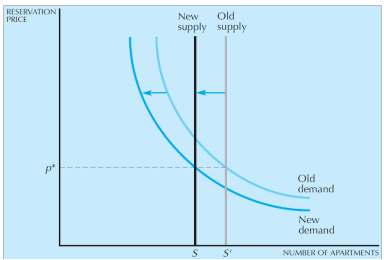


Figure 6: Both demand and supply decrease

- Suppose the outer ring is developing really well, so more construction of apartments in the outer ring, while inner-ring apartments are getting old.
- The supply of apartments decreases. The supply curve shifts to the left.
- The demand of apartments decreases more. The demand curve shifts to the left more.
- Lower equilibrium price, and less quantity traded.

Outcome with Institution 2 (Discriminating monopolist)

Multi prices, the monopolist gets the whole trading surplus.

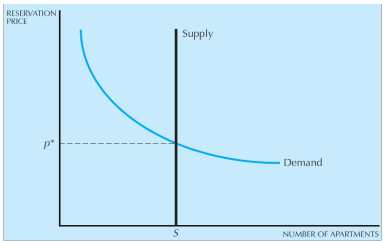


Figure 7: Discriminating monopolist

- The discriminating monopolist knows each person's reservation price.
- Exactly the same people, namely, those who value an apartment more than p^*, will get the apartments as in the case of a competitive market. But each will pay the reservation price. The last person who rents an apartment pays p^*.
- While the monopolist get the whole trading surplus.

Outcome with Institution 3 (Ordinary monopolist)

One price higher than p^*, the monopolist maximizes the profits.

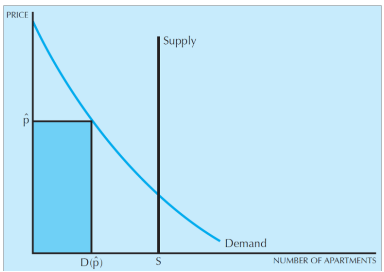


Figure 8: Ordinary monopolist

- The monopolist knows only the demand curve
- Fewer apartments will be rented, and each apartment will be rented at a higher price than in the competitive market.
- Let's use $D(p)$ to represent the function – the number of apartments demanded at price p. The monopolist will receive the revenue $pD(p)$.

Outcome with Institution 4 (Rent control)

Restrict the price lower than p^*.

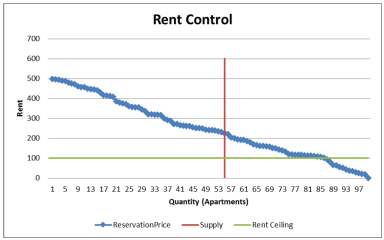


Figure 9: Rent Control

- **excess demand**: quantity demanded > quantity supplied.
- The answer to who gets the apartments under rent control depends on who has the most time to spend looking around, who knows the current tenants, and so on. (More assumptions are needed)

Questions: Institution Comparison

Which institution is the best?

- What is "the best"?
  - **Pareto improvement**: an allocation change that makes at least one person better off without making anyone worse off
  - **Pareto efficiency**: an allocation is Pareto efficient if no Pareto improvement can be made (maximum total surplus)
  - Only the competitive market and the discriminating monopolist can achieve the Pareto efficiency. (Quiz or Problem Set)
- Alternative standards for "the best"? How about a "fair" market?

Take Aways

What we should know now

- Competitive Market: many sellers and many buyers, competition $\Rightarrow$ one equilibrium price
- Reservation Prices: max (min) willingness to pay (accept) for buyer (seller)
- Demand Curve: quantity demanded (horizontal) at different prices (vertical)
- Competition among buyers (sellers) drives price up (down)

What's next

- Consumer Theory (**Ch2, Ch3, Ch4**, Ch5, Ch6)


Thank You!