Main topics

- Long run cost functions
- Four classes of market structure (review)
- Welfare analysis of market structures
  - perfect competition
  - monopolistic competition
  - oligopoly
  - monopoly
- If perfectly competitive markets are “ideal”, how common are they?
Long-Run Average Costs
(Figure 8.16 from Mansfield and Yohe)

Long-run average costs may be *
- upward sloping,
- downward sloping,
- flat.

U-shaped long-run average cost curves have regions of increasing and decreasing returns to scale.

Costs per unit of output

Costs per unit of output

Costs per unit of output

Increasing long-run average costs mean increasing returns to scale.

Decreasing long-run average costs mean decreasing returns to scale.

Constant long-run average costs mean constant returns to scale.

Four Classes of Market Structure
(from Lecture on Price Competition)

<table>
<thead>
<tr>
<th>Competition Type</th>
<th>Market Structure</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect competition</td>
<td>Firms are price-takers. They have no market power.</td>
<td>(Perfectly) competitive market</td>
</tr>
<tr>
<td>Imperfect competition</td>
<td>Firms are not price takers. They have some market power.</td>
<td>Monopolistically competitive market</td>
</tr>
<tr>
<td></td>
<td>Oligopoly</td>
<td>Concentrated, product may or may not be differentiated</td>
</tr>
<tr>
<td></td>
<td>Monopoly</td>
<td>Concentrated, product may or may not be differentiated</td>
</tr>
</tbody>
</table>
Which market structure is better for society?

Economists argue that, when markets work properly, competition drives $P = MC$ will produce maximum social welfare. Why?

A useful concept for analysis of social welfare outcomes is:

**Consumer surplus:**

- "the monetary difference between what consumers are willing to pay and what they must pay."
- If the good is not divisible, then it is the area shown...
- If the good is divisible, then it is the area below the demand curve and above the price.

Consumer surplus: our usual assumption.
Consumer and Producer Surplus in a Perfectly Competitive Market

Consumer + producer surplus is at a maximum when P = MC

Market demand
Market supply

P = MC

Market output

Market supply

Consumer + producer surplus is at a maximum when P = MC

A firm’s output

Perfectly Competitive Markets

Proposition: Perfectly competitive markets produce optimal social welfare outcomes.

Perfectly competitive markets—their characteristics

- have a homogeneous product, many buyers and sellers, and easy entry and exit of firms in and out of the market.

The classic argument has two parts:

- Firms willingly choose their output and price such that price equals marginal cost (P = MC)
- Entry and exit of firms in the long run cause perfectly competitive firms to produce at minimum average costs.

(P = MC = min AC in the long run)

Profits and Entry

- Normal and abnormal profits
  - Suppose all firm owners “pay themselves” a normal rate of return and figure it into their costs.
  - Then, “normal profit” = 0, and positive profits are “abnormal profits.”

- If firms in an industry earn abnormal profits, and entry is easy (costless), then new firms will enter.
Suppose all firm owners "pay themselves" a normal rate of return and figure it into their costs. Then, "normal profits" = 0, and positive profits are "abnormal profits." If firms in an industry earn abnormal profits, and entry is easy (costless), then new firms will enter.

Average cost is at a minimum when P = MC = AC. This happens in the long run as long as firms enter and exit freely in pursuit of abnormal profits.

How does a little market power change the outcome?

Proposition: Monopolistically competitive markets produce near optimal social welfare outcomes.

- Monopolistically competitive markets—their characteristics have a heterogeneous (differentiated) product, but otherwise, they resemble perfectly competitive markets—many buyers and sellers, and easy entry and exit of firms in and out of the market.
- The classic argument has two parts:
  - Firms have downwardly sloping demands, but because there are many differentiated substitutes, individual firms' demand curves tend to be highly elastic. When they set MR = MC, the price they set is not too far above MC.
  - Entry and exit of firms in the long run do not produce at minimum average costs. (AC > min AC in the long run)
Consumer Surplus in a Monopolistically Competitive Market

Monopolistically competitive firms face:
- Elastic demands because there are many close substitutes
- But downward sloping demands because the product is differentiated

$\text{MR} = \text{MC}$

Monopolistic Competition in the Long Run

As in perfect competition
- If firms in an industry earn abnormal profits, and entry is easy (costless), then new firms will enter.

Monopolistic Competition in the Long Run

Market Demand

$\text{Market price} \leq \text{min AC}$
Monopoly

- Monopoly is a market structure in which a single firm supplies the entire market.
- There are two significant features that distinguish monopoly outcomes from monopolistic competition.
  - Monopolies produce products that have no close substitutes. (Note I did not say no substitutes.) Therefore, the market demand for the monopolist’s product will generally be more inelastic. What consequence will that have on the price?
  - Either natural or artificial barriers to entry prevent entrants from eroding positive abnormal profits.

Consumer Surplus in a Monopoly Relative to Monopolistic Competition

How does oligopoly differ from monopoly and monopolistic competition?

- The welfare outcome falls between the two.
- Entry barriers are not as high, but not high enough so that no competitors exist.
- When there are only few competitors, they are often referred to as “rivals.”
- How competitive rivals are depends on strategic factors that we will discuss later in the semester.
Summary

- Consumer surplus
- Competitive markets
  - Perfect competition (an ideal)
  - Monopolistic competition (a "close second")
  - The social value of variety.
- Monopoly
  - A worse outcome
  - (But this is not the end of the story)
- Oligopoly
  - ("Stay tuned" ... We don't have enough tools in our basket yet.)