Notes for Chapter 15

**Monopoly**

Firms in perfect competition face the most competition. (They have no market power.)

Monopolies face the least competition. (They have the most market power.)

*Defn.* **Market power** – the ability of a single economic actor (or small group of actors) to have a substantial influence on market prices.

*Defn.* A **monopoly** is an industry that produces a good or service for which there are no close substitutes

The fundamental cause of monopoly is **barriers to entry**.

Monopoly remains only seller in its market because other firms are unable to enter and compete.
Sources of barriers to entry

1. Monopoly Resources

A monopoly could have sole ownership or control of a key resource that is used in the production of the good.

(example: The DeBeers Diamond Monopoly controls about 80 percent of the diamonds in the world.)

2. Government-Created Monopolies

a. Monopolies can arise because the government grants one person or one firm the exclusive right to sell some good or service.

b. Typically the government grants a monopoly because doing so is viewed to be in the public interest.

Patents on drugs, copyright laws.
To evaluate, need to look at costs and benefits.

3. Natural Monopolies

*Defn.* An industry is a *natural monopoly* when a single firm can supply a good or service to an entire market at a smaller cost than could two or more firms.

Arises when there are economies of scale --- the ATC curve decreases as output increases.

*Example: Distribution of water*

To provide water must build network of pipes. If two or more firms were to compete to provide water service, they would each have to pay the fixed cost of building the network. Thus, the average total cost of water is lowest if a single firm serves the market.
How Monopolies Make Production and Pricing Decisions

The key difference between a competitive firm and a monopoly is the monopoly's ability to influence the price of its output.

The competitive firm is small relative to the market it operates in ⇒ it takes price as given.

By contrast, because a monopoly is the sole producer in its market, it can alter the price of its good by adjusting the quantity it supplies to the market.

A Monopoly's Revenue

Note that to increase Q, the monopolist must decrease price (a trade-off).

This is not true for the competitive firm.

There are two broad monopoly situations that create different trade-offs:

**Single Price Monopoly**
A monopoly that charges everyone the same price.

**Price Discrimination**
Occurs when a firm charges the same customer different prices for different unit purchased (*example --- volume discounts*) or when a firm charges different customers different prices (*example --- airline tickets*).
Start with a Single Price Monopoly

Question: What is the monopolist's marginal revenue?

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<th>Q</th>
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<th>MR = ΔTR/ΔQ</th>
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<td>1</td>
<td>$2.00 × 1 = $2.00</td>
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<td>$1.80</td>
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<td>$1.40</td>
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• Note that for any Q, P > MR

• When the monopolist lowers her price, two things happen:
  1. Gains new customers
  2. Loses revenue on purchases by old customers
Example
Has 1 customer when charges $2.00 (Mr. A)

Lowers price to $1.80. Now Mr. B is interested in buying a unit.

1. Gains $1.80 on Mr. B
2. Loses $.20 on Mr. A (he would have paid $2.00)

Net gain is $1.60. *This is the MR of second unit!*

Example
Has 2 customers when charges $1.80 (Mr. A and Mr. B)

Lowers price to $1.60. Now Ms. C is interested in buying a unit.

1. Gains $1.60 on Ms. C
2. Loses $.20 on Mr. B and loses $.20 on Mr. A

Net gain is $1.20. *This is MR of third unit!*
• The demand curve and the MR curve are different for the monopolist

• For any Q, the P (which we read off the D curve) is greater than the MR (which we read off the MR curve)

• This is not the case with our competitive firm. The MR curve is on top of the D curve.

**How does the monopolist set P and Q?**

• Wants to maximize profit.

• Produces up until the point in which MR = MC.

• This gives Q*.

What price should monopolist charge?

• Highest price possible! Wants to choose the highest P she can charge and still sell Q*.

• Picks P* off of D curve.

(Same as perfectly competitive firm. First finds Q* then finds P* using D curve. But D curve is MR curve! This is not the case with monopoly)

• P* is price that allows her to sell Q* (the profit maximizing quantity).
  Any P > P* is not profitable
  Any P < P* is not profitable
What is the monopolist's profit?
Does the monopolist make an economic profit?

Recall for perfectly competitive firm:

\[ P > ATC \implies \text{positive economic profits} \]

\[ P = ATC \implies \text{zero economic profits} \]

\[ P < ATC \implies \text{negative economic profits} = \text{economic losses} \]

Same for monopolist! Same for firms in all industry structures!

\[ Q \times P > Q \times ATC \implies \text{Total revenue} > \text{Total Cost} \implies \text{economic profits} \]
What’s the difference between perfectly competitive firm and a monopolist in terms of ability to make economic profits?

- In the short-run, both the monopolist and the perfectly competitive firm can earn economic profits.

- In the long-run, a perfectly competitive firm can not earn an economic profit. There are no barriers to entry.

- In the long-run, because there are barriers to entry, the monopolist can earn positive economic profits. The monopolist is protected from competition by the barriers to entry.
Efficiency Comparisons

Assume we have a perfectly competitive industry that becomes a monopoly.

Show that under the monopoly:

1. $Q_M < Q_{PC}$
2. $P_M > P_{PC}$

Is this bad from a social perspective?
Get underproduction!
Show deadweight loss (DWL).

This DWL is the rationale for government anti-trust laws and government regulation of monopoly.

Monopoly increases price $\Rightarrow$ consumers buy less $\Rightarrow$ they no longer buy some units (those between $Q_M$ and $Q_{PC}$) for which $MR > MC$.

These units should be produced. Since they are not produced there is a DWL.
The Monopoly’s Profit: A Social Cost?

1. Welfare includes the welfare of both consumers and producers.

2. The transfer of surplus from consumers to producers is therefore not a social loss.

3. The deadweight loss from monopoly stems from the fact that monopolies produce less than the socially efficient level of output.

4. However (an exception), if the monopoly incurs costs to maintain (or create) its monopoly power, those costs would be included in deadweight loss.
Price Discrimination

Conditions for price discrimination:

1. At least two different classes of buyers with different willingnesses to pay.
2. Seller must be able to identify into which class a buyer falls.
3. Resale of the product between buyers must be impossible (or very difficult).

Let's look at situation in which monopolist charges different prices for different people.
Example: airlines

2 classes of travelers:

Business
- Few choices
- Higher willingness to pay

Vacation
- Lots of choices
- Lower willingness to pay

Is it profitable for the monopolist to charge the two sets of customers different prices?

Yes, since in each instance it sets MR = MC.
It gets maximum profits from each group.

Can the airline company do this?

Yes, all conditions for price discrimination are met.
Is this (price discrimination) good or bad from a social perspective?

• Note that output is greater when the monopolist price discriminates than when it does not.

• To see this, think about the monopolist charging only one price.

  ➢ The price chosen will be between $P_{\text{low}}$ and $P_{\text{high}}$.

  ➢ But, this means the monopolist loses some of the vacation travelers (the low WTP travelers).

  ➢ This means less output is produced.

  ➢ This is bad from a social perspective.

$\Rightarrow$ Price discrimination leads to more output being produced. Thus, it is good from a social perspective. It leads to less deadweight loss.
Extreme example: Perfect price discrimination
Charge everyone the maximum price they are willing to pay.

Gain 1 more customer, get MR. Here D (max WTP) = MR (price charged).

Now the monopolist is producing the socially efficient output!

NOTES:

- Perfect price discrimination leads to efficient output. The more perfectly the monopoly can price discriminate, the closer its output gets to the competitive output and the more efficient is the outcome.

- Perfect price discrimination pushes consumer surplus to zero and increases producer surplus to the sum of consumer and producer surplus in perfect competition.
Some examples of price discrimination

1. **Movie tickets**
   Charge children and senior citizens less since they have lower WTP.

2. **Airline tickets**

3. **Discount coupons**
   Those that use them have lower WTP.

4. **Financial aid**
   Wealthy students have more resources and therefore a higher WTP.

5. **Quantity discounts**
   Charge different price to same customer for different units that the customer buys.
   
   *Example.* Lower prices to customers who buy large quantities. Charge 50 cents per donut, but $5 per dozen. Customer pays more for first unit than for the twelfth. This is a successful way of price discriminating because a customer's WTP for an additional unit declines as the customer buys more units.