Lecture # 17 – Regulating Monopolies

I. What Causes Monopolies?

- Monopolies arise from barriers to entry.
    - Technical barriers to entry
        1. Economies of scale
            - Occurs when it is cheaper to produce large quantities because of falling average costs.
            - Natural monopoly -- an industry in which advantages of large scale production make it possible for a single firm to produce at a lower average cost than a number of small firms.
        2. Large sunk costs (fixed costs)
            - Often the cause of natural monopolies.
        3. Technical superiority
            - Note: this is not permanent.
    - Legal barriers to entry
        1. Patents
        2. Franchises awarded by contract
        3. Control of a scarce resource
        4. Barriers erected by firms to discourage entry

II. Regulating Monopolies

- Because monopolies lead to inefficiencies (measured by deadweight loss), they are regulated. There are two main types of regulation.
    - In most cases, anti-trust laws exist to prevent monopolies from occurring.
    - When provision by a monopoly makes sense (e.g. because of natural monopolies), governments regulate the price set by the monopolist.

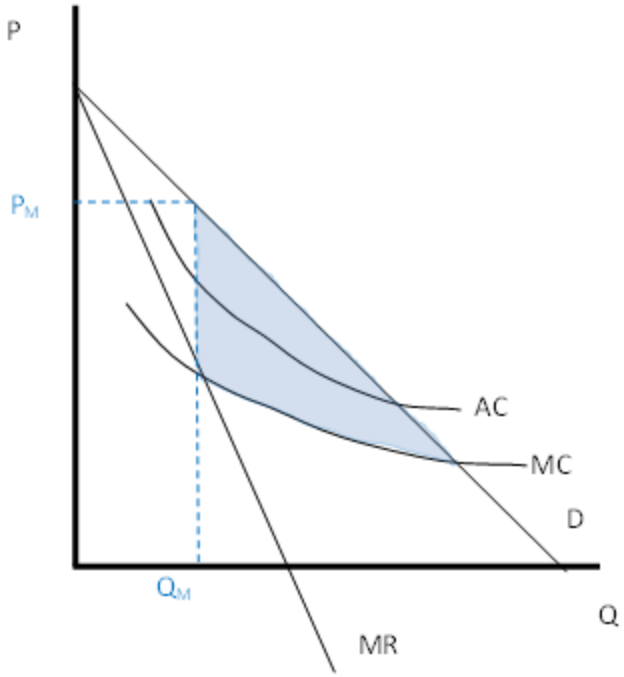
A. Anti-Trust Laws

- Regulating price is used for natural monopolies. In other cases, monopolies are prohibited by anti-trust laws.
- Sherman Act (1890)
    - Section one prohibits contracts, combinations, or conspiracies in restraint of trade.
    - Section two makes it illegal to monopolize or attempt to monopolize a market.
- Clayton Act (1914)
    - Helped to clarify the Sherman Act.
    - Prohibits actions that restrain competition.
- Enforcement:
    - Federal Trade Commission (created 1914)
    - Department of Justice's Anti-Trust Division
    - Private legal proceedings

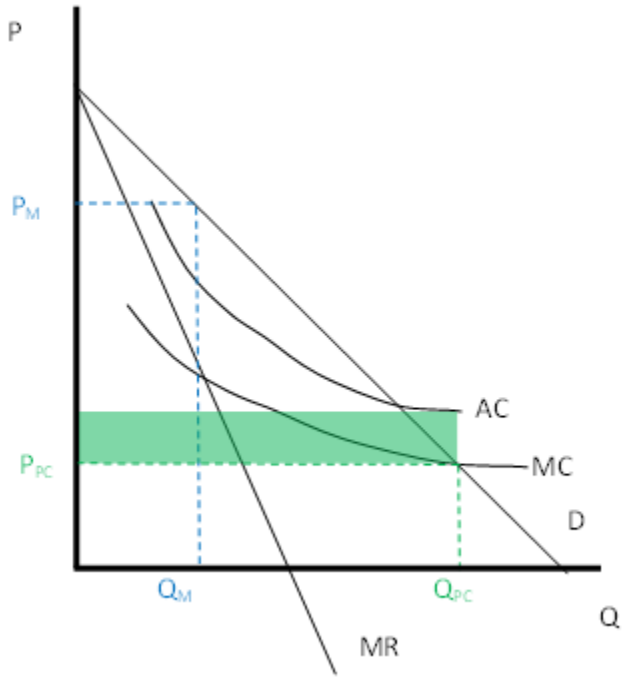
B. Regulating Price

- Whether the government is acting as a regulator of a monopoly firm or is providing the service as a monopoly themselves, determining the price at which to sell the good is an important question.
- The role of prices in the public sector
    - In the public sector, prices can still signal scarcity and value to consumers.
        - Consider, for example, providing water for free. That does not give consumers a signal to conserve.
    - But, prices can also play other roles.
        - Prices generate revenue to pay for goods and services
            - Particularly important to cover the fixed costs of infrastructure.
            - The marginal cost of crossing a bridge may be near 0, but recovering funds to pay for construction is still necessary.
        - Prices can be set lower than in the private sector:
            - To encourage consumption of desirable goods (e.g. public vs. private university tuitions)
            - For reasons of equity
        - Administrative costs are a concern
            - Erecting a toll bridge on a highway is easier than collecting entrance fees at every public park
- Price regulation is used for natural monopolies. Due to economies of scale, it is better to have one firm producing output than to have several small firms. Thus, we allow the monopoly, but regulate the price at which it sells output.

- Without regulation, the monopolist would determine price and quantity by operating where MC = MR. This results in a positive profit (although not shown below, we know there is profit because P > AC at Q_M).
    - There is a deadweight loss here, because the price is greater than marginal cost. The deadweight loss is shaded in blue below.

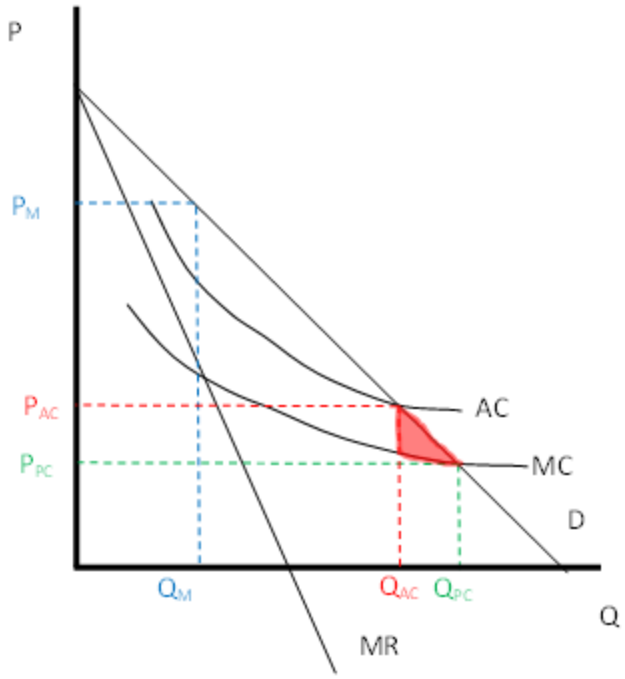


- Marginal cost pricing
  - Setting price equal to marginal cost provides the most efficient outcome
    - However, with a natural monopoly, AC is falling. Thus, setting the price equal to MC will lead to losses, since MC is less than AC when AC is falling.
      - The green rectangle below is the loss that occurs using marginal cost pricing.



  - For a public sector organization, general revenues raise from taxes can be used to cover the fixed costs. Or, we could consider other pricing options discussed below.
  - When regulating the private sector, we consider the alternatives below, since private sector firms won't be willing to operate at a loss.

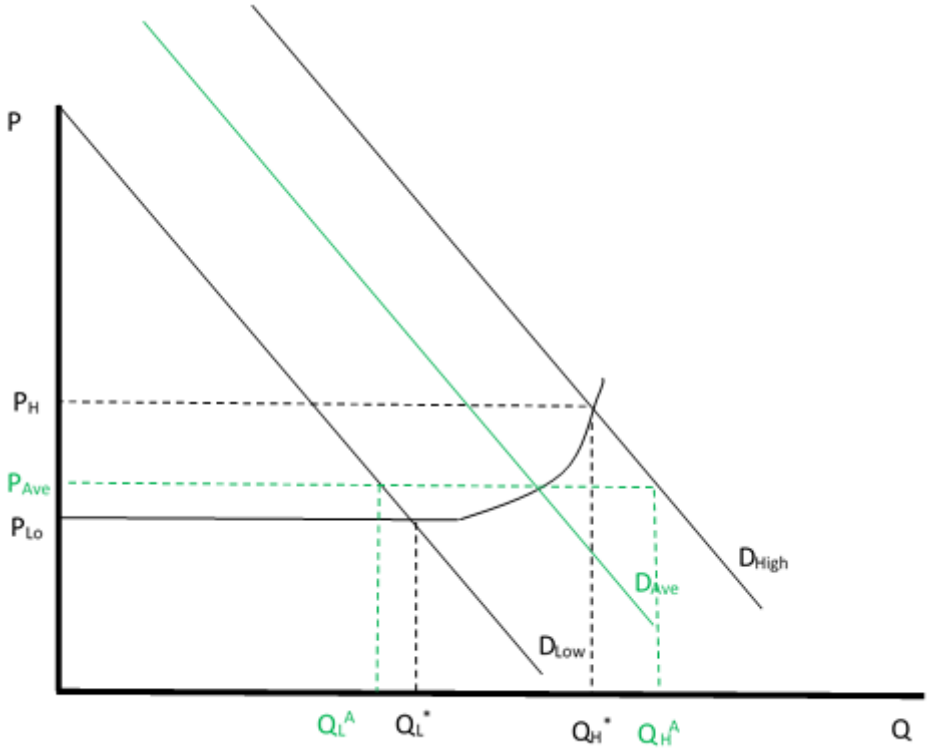
- Average cost pricing -- set the price where AC = AR = demand. This yields zero economic profits.
    - In the graph below, determining price where AC = demand results in some deadweight loss (shaded in red).



    - Average cost pricing is thus less efficient than marginal cost pricing, but it allows the firm to continue to operate. Without it, this good wouldn't be provided, since the firm would lose money.
        - It is, however, more efficient than monopoly pricing, as the deadweight loss here is smaller than the deadweight loss shown in blue on the earlier graph.
    - Average cost pricing can be implemented using rate of return regulation.
        - The regulatory agency decides on a "competitive" or "fair" rate of return for the utilities investments, based on what the rate of return is in other competitive industries.
        - Since economic profits include opportunity costs, such as the cost of not investing your money elsewhere, this also yields zero economic profits.

- Two-part tariff
    - Includes a flat fee, such as a membership fee, to use a service, plus a per-unit charge based on consumption.
        - The flat fee helps cover fixed costs
        - The per-unit charge can be based on marginal costs.
            - Charging consumers per unit gives them proper incentives to conserve.
            - But, the flat membership fee might discourage some low income users.
                - Using subsidies for the flat fee can address this concern.
                - For example, low income families could be exempt from the flat rate fee.
                    - The flat fee will then need to be higher for other families to cover the fixed costs.
- Price discrimination
    - Charging different prices to different buyers of the same product.
    - Price discrimination allows the monopolist to capture more consumer surplus.
    - Examples:
        - Perfect Price Discrimination – Charging a different price to each consumer.
            - Each consumer is charged her reservation price -- the maximum she is willing to pay for each unit bought.
            - Allows the producer to capture all consumer surplus
                - However, difficult to implement in practice, as requires negotiating a price with each buyer.
                - Perfect price discrimination applies when prices are negotiated between buyers and sellers, such as buying a car.
        - Segmenting the market into two or more groups with different demands for a product in order to charge different prices to each group (e.g. student discounts, senior citizen discounts).

- Peak pricing
  - Here, we segment the market by time. A higher price is charged during periods of peak demand.
  - Peak pricing allows the producer to capture higher willingness to pay when demand is high
    - Such as a cold beverage on a hot summer day.
  - Peak pricing addresses two issues
    - Facilities need to be priced to encourage efficient use
    - Sufficient capacity is needed to meet peak demand (e.g. rush hour)
  - Marginal cost starts flat, but increases as congestion becomes a problem
    - If a single price were set, it would be based on average demand (in green)



  - Note that, with a single price, usage is too high during the peak period and too low at other times
    - The quantity used in peak demand is Q_H^A, and the quantity used off-peak is Q_L^A.
    - Setting a high price in peak demand (P_H) and lower price off-peak (P_L) increases usage off-peak and reduces the quantity demanded in peak times.

        - Potential issues
            - May lead to overcrowding near thresholds
                - E.g. people who try to ride the subway right before rush hour fares begin
            - Only works if peaks are well-defined and predictable
            - Distributional issues
                - Low income people are more likely to be priced out of peak times
- The article on utility pricing from California looks at how one local utility dealt with the challenges of raising funds to cover high fixed costs.
    - As you read this article, consider how the community dealt with multiple concepts of fairness as it grappled with the decision of what pricing strategy to use. We'll discuss this example in class on Wednesday.