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P R I S T I N E

Economics - II

- Major Questions:-
 - What are the key features of a monopoly and how natural monopolies arise ?
 - What are relationship between price, marginal revenue, average cost, and marginal cost for a monopoly ?
 - Why monopolies restrict output to an economical inefficient quantity compared to pure competition ?
 - What are the social benefits of regulation imposing average cost pricing ?
 - Why marginal cost pricing for a natural monopoly requires a subsidy ?

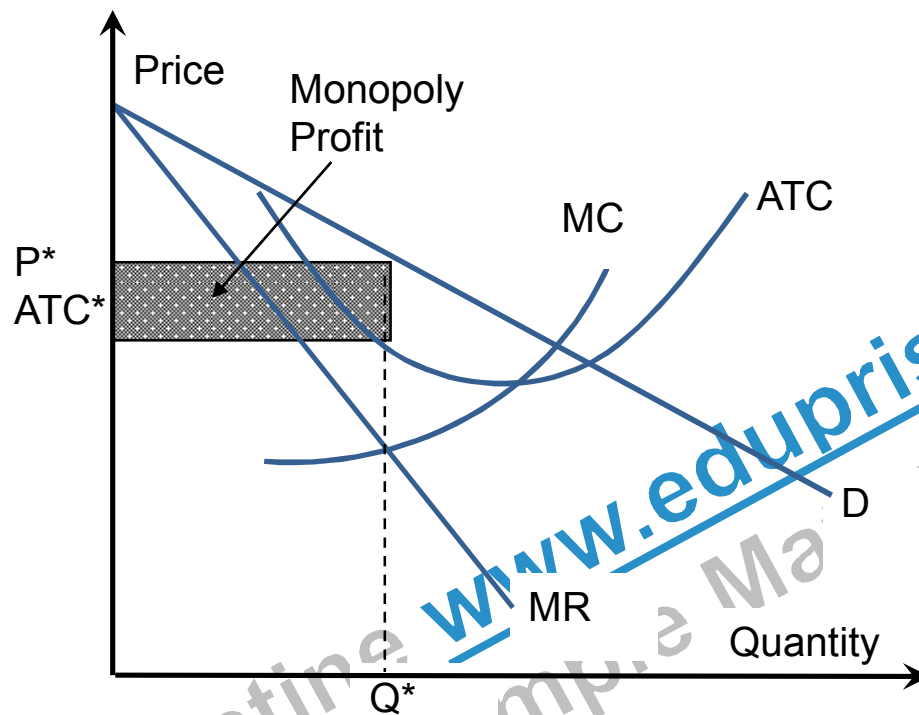
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Monopoly

- A monopoly is characterized by
 - **Only 1 seller**
 - Specialized product with no substitutes
 - **High Barriers to entry (BTE)**
 - Types of barriers
 - **Legal barriers:** Patents, copyrights, government granted franchises
 - **Natural barriers:** high capital costs and economies of scale or scope, e.g.: electric utility.
 - Typically AC falls throughout the relevant range of demand (vis-à-vis a normal AC, which is U shaped), this is due to constant MC and fixed cost contribution falling throughout as output increases
- Monopoly arises due to patents, technical barriers, control over scarce natural resources which are needed as raw material or due to government policy
- Price setting strategies include Single price or Price Discrimination

- No difference between industry and firm
- **Downward sloping demand curve**
 - Meaning demand will decrease if high prices are fixed or vice versa
 - profit maximization involves a trade-off between price and quantity
- To maximize profit, monopolists will expand output until $MR = MC$
 - Demand curve must lie above ATC to earn profits
- Due to high BTE, monopolist profits do not attract new market entrants.
⇒ **In LR economic profits can exist unlike pure competition markets**
- Monopolists do not charge the highest possible price because monopolists want to maximize profits, not price.

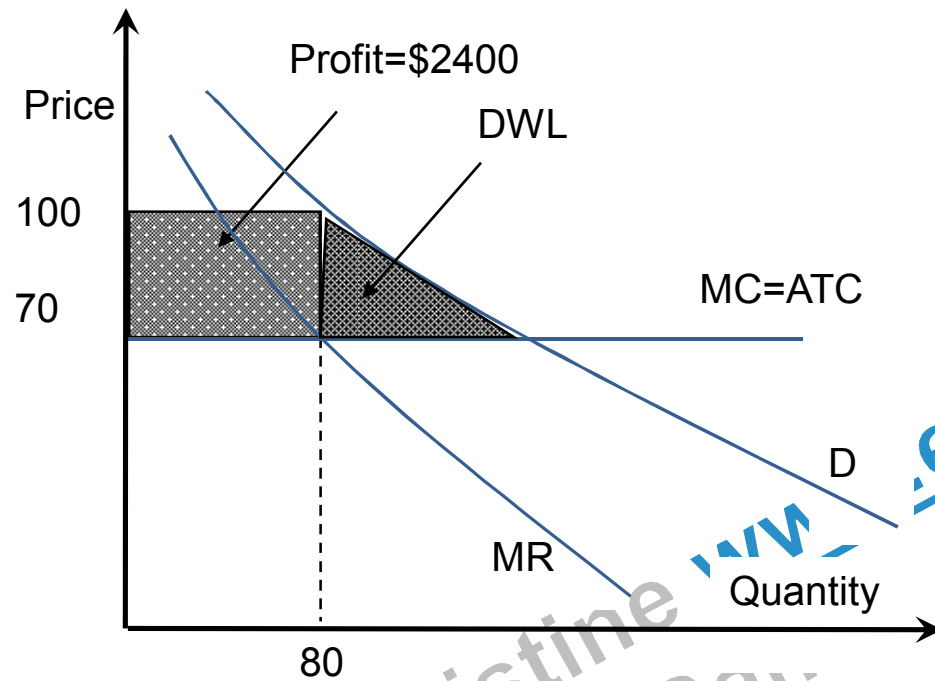
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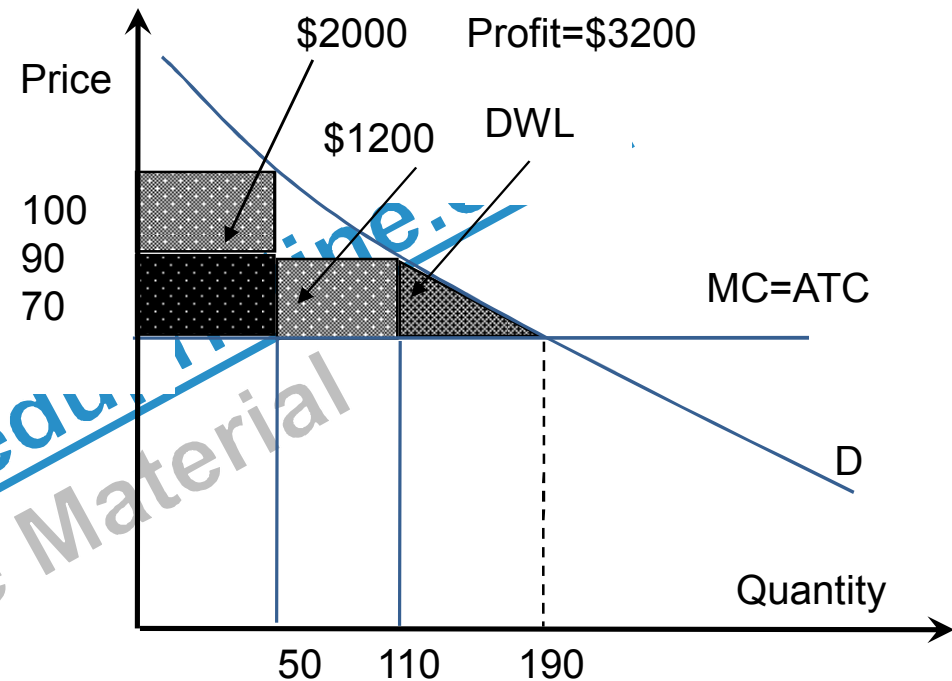
Monopolistic Short Run Costs and Revenue

- **Profit maximizing at the quantity when $MR = MC$.**
 - The economic profit equal to $(P - ATC) \times Q$.
- Demand curve must lie above ATC at Q so that price > ATC and firm earn profit
- Optimal quantity will be in the elastic range of the demand curve.

- Charging different prices for identical product / service from different customers
 - E.g. Pricing of airlines tickets – Early discounts
 - The price differentiation arising due to different cost structures (lower price, due to cost benefit) is NOT called Price Discrimination
- **Conditions for price discrimination**
 - Seller must have at least two identifiable groups of customers with
 - **Different price elastic ties** (high price to group with more inelastic demand)
 - Seller face a downward-sloping demand curve.
 - Seller can prevent the customers paying the lower price from reselling the product to the customers paying the higher price – prevent consumer switching
 - The primary motive of Price Discrimination is to convert **consumer surplus** into **producer surplus / monopoly profit**
 - Two methods of Price Discrimination
 - Among units of goods – Buy a larger quantity and get reduced price
 - Among groups of buyers – More common, depending on customer segmentation



Without Price Discrimination

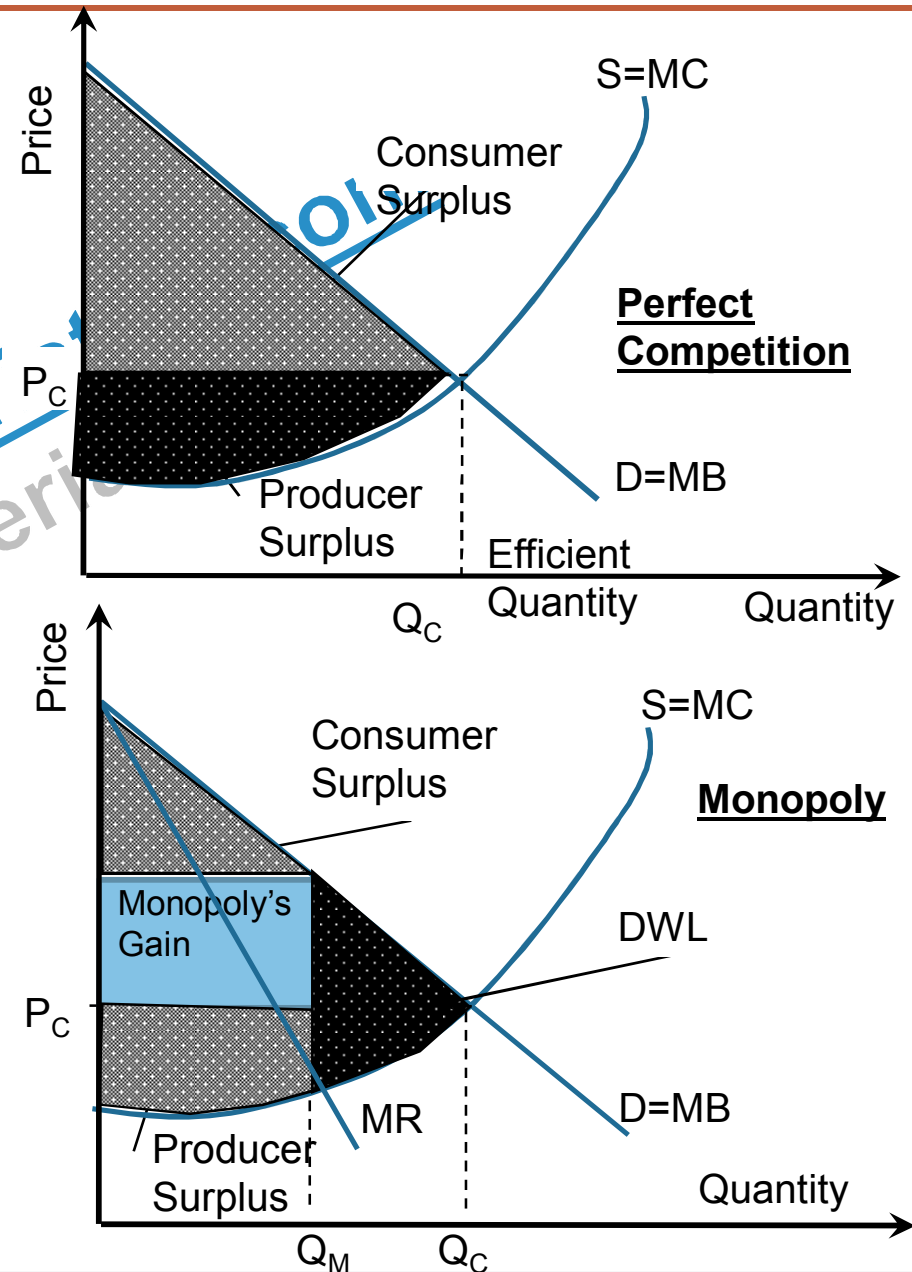


With Price Discrimination

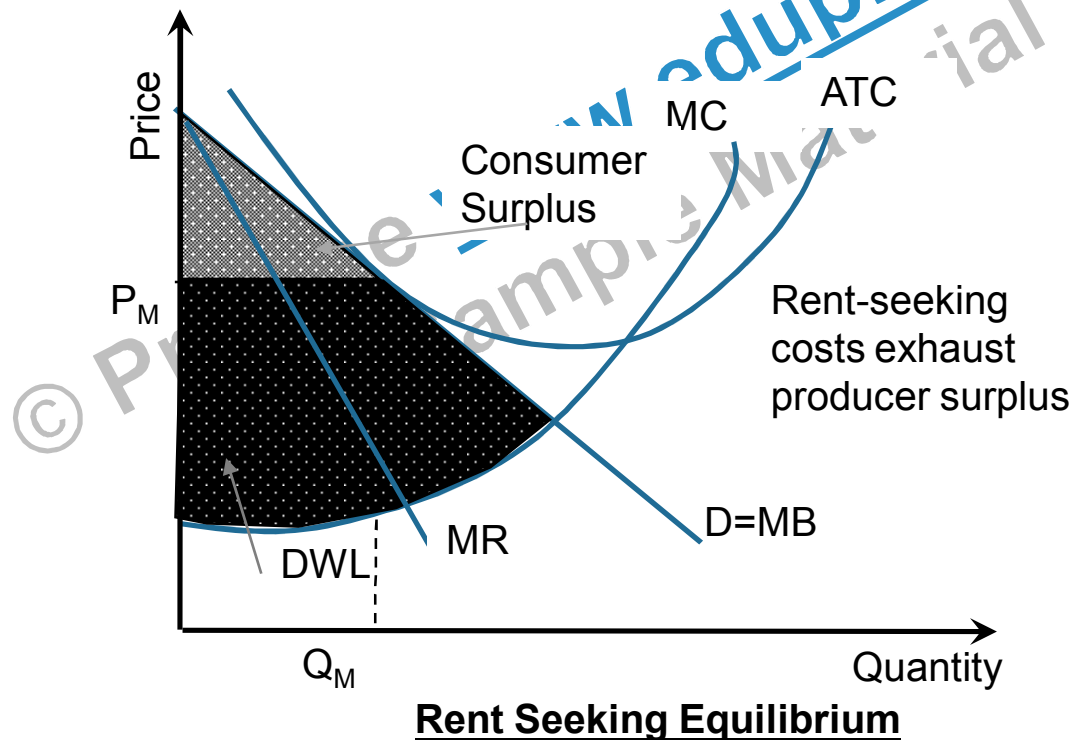
- **Price discrimination** \Rightarrow **Q** \uparrow , **Economic Profit** \uparrow ,
- Example assumes no fixed costs & constant variable costs so that $MC=ATC$
- Total profit is increased to \$3,200 and total Output is increased from 80 units to 110 units.
- In a PD, where total output remains same, some (shaded) part is converted from CS to monopoly profits
- Where total output increases (shown above), Some part of deadweight loss also converts into monopoly profits

Deadweight Loss in Monopoly

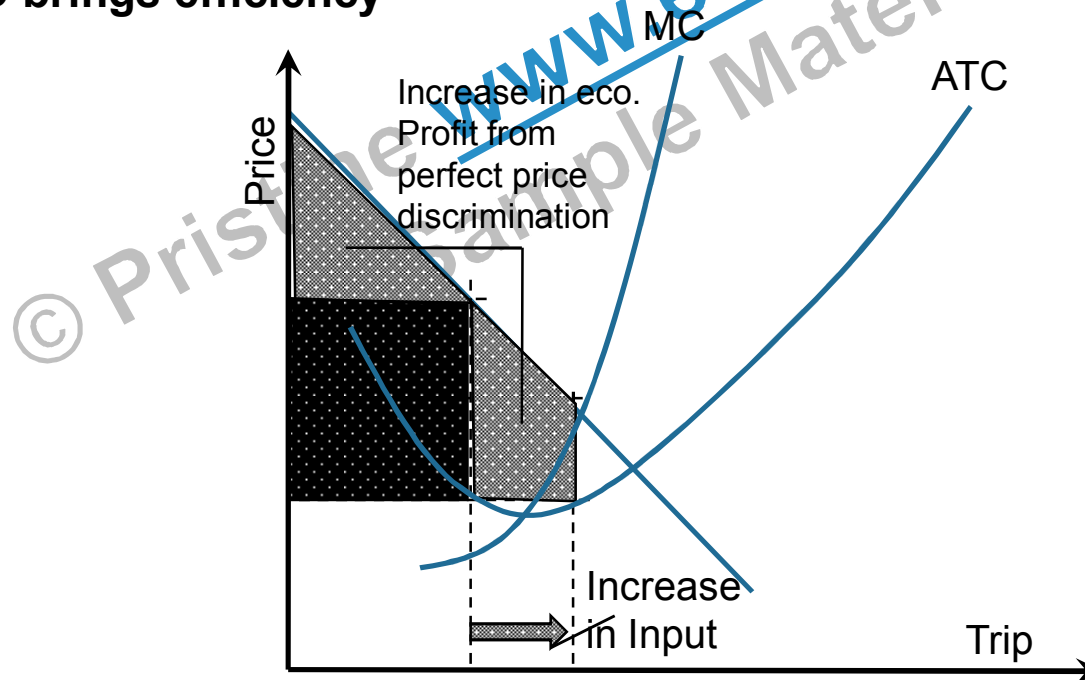
- **In monopoly, consumer surplus is reduced due to**
 - Reduction in output
 - Sum of consumer and producer surplus in monopoly < Perfect competition
 - High prices paid by consumers compared to perfect competition
 - As represented by Deadweight loss
 - Difference between Monopoly profit and DWL
 - Monopoly profit is additional profit (over perfect competition) due to increased profit – This directly goes to the producer / monopolist – This earlier was a part of CS in Perfect competition
 - DWL is the loss due to restricted output (difference in quantities of perfect competition and monopoly) – this comes from both CS and producers surplus
- However, price discrimination reduces this inefficiency
 - By increasing output and allocating more resources where $MR = MC$
 - Firm gains from customers with inelastic demand while still providing goods to customers with more elastic demand.

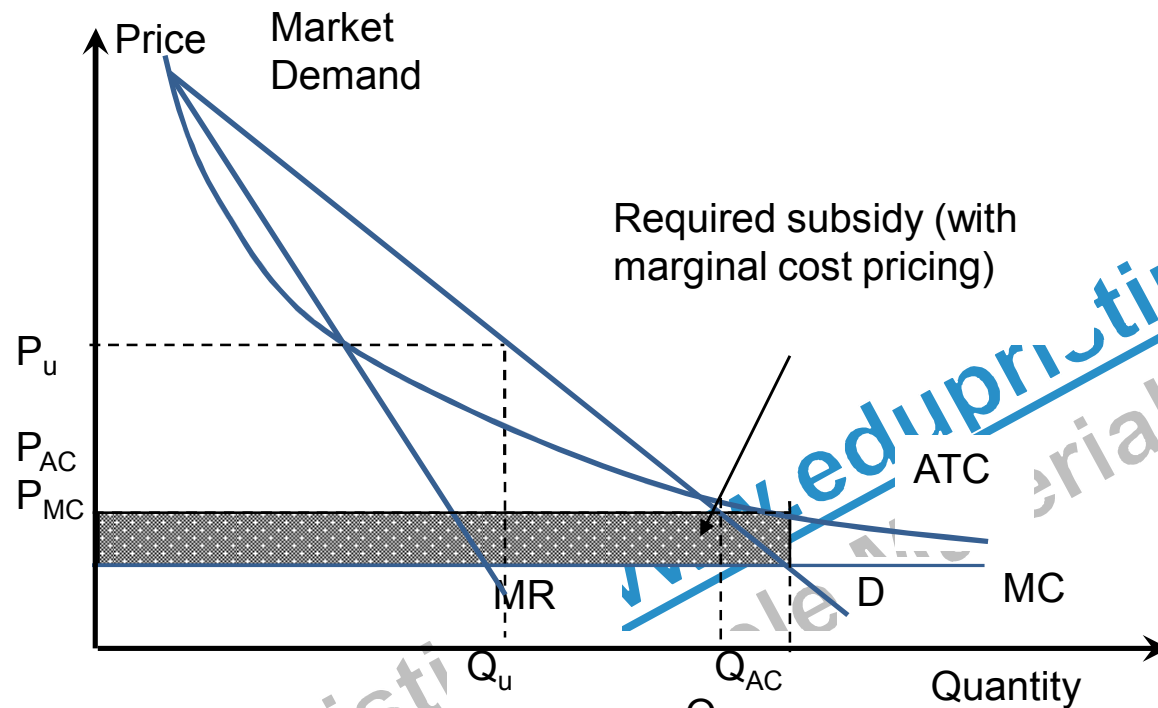


- Any surplus (whether PS, CS or economic profit) is called Economic RENT. Rent seeking is the behavior of pursuing rent (converting CS into PS in monopoly)
- Ways of rent seeking – (1) Buy a monopoly (buy at a price lower than monopolist's economic profit) (2) Create a monopoly (substantial costs influencing political and legal systems)
- Generally due to competitive rent seeking behaviour, AC curves shift upwards to ensure that economic profit is zero



- **Results for Perfect price discrimination (PPD)**
 - Monopolist charges each **consumer the maximum they are WTP**
 - Monopolist earns entire profit with **zero consumer surplus**
 - No deadweight loss (Deadweight loss is converted into producers surplus)
 - Monopolist produces the same Q as under perfect competition.
- Since producer can charge a different price on every consumer on the demand curve, MR curve shifts upwards to align itself with Demand curve
- **Hence PPD brings efficiency**





Natural monopoly occurs when a single supplier brings maximum efficiency of production (minimum ATC) and distribution due to economies of scale and benefits economy

Natural Monopoly – Average Cost & Marginal Cost Pricing

- A single-price monopolist will maximize profits by producing where $MR = MC$, producing quantity Q_u & charging P_u .
- If two firms produced approximately one-half of output Q_{AC}
 - ATC for each firm would be much higher than for a single producer producing Q_{AC}
- **Potential gains from monopoly** – (1) Incentive to innovation (mixed results) (2) Economies of scale and scope

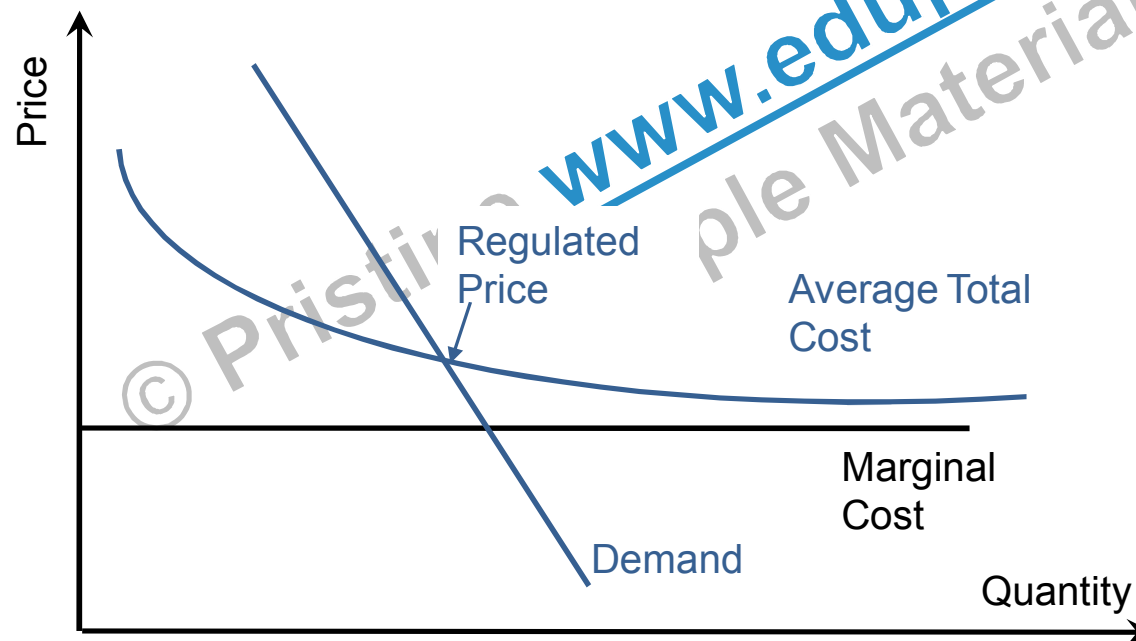
Regulation of Monopoly

- Monopolists **produce less than the optimal quantity** (the sum of producer surplus and consumer surplus is not maximized) \Rightarrow inefficient resource allocation and causes creation of deadweight loss
- Government **regulation** may improve resource allocation by limiting the prices monopolies may charge
 - Using average cost pricing
 - Using marginal cost pricing

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Average Cost Pricing

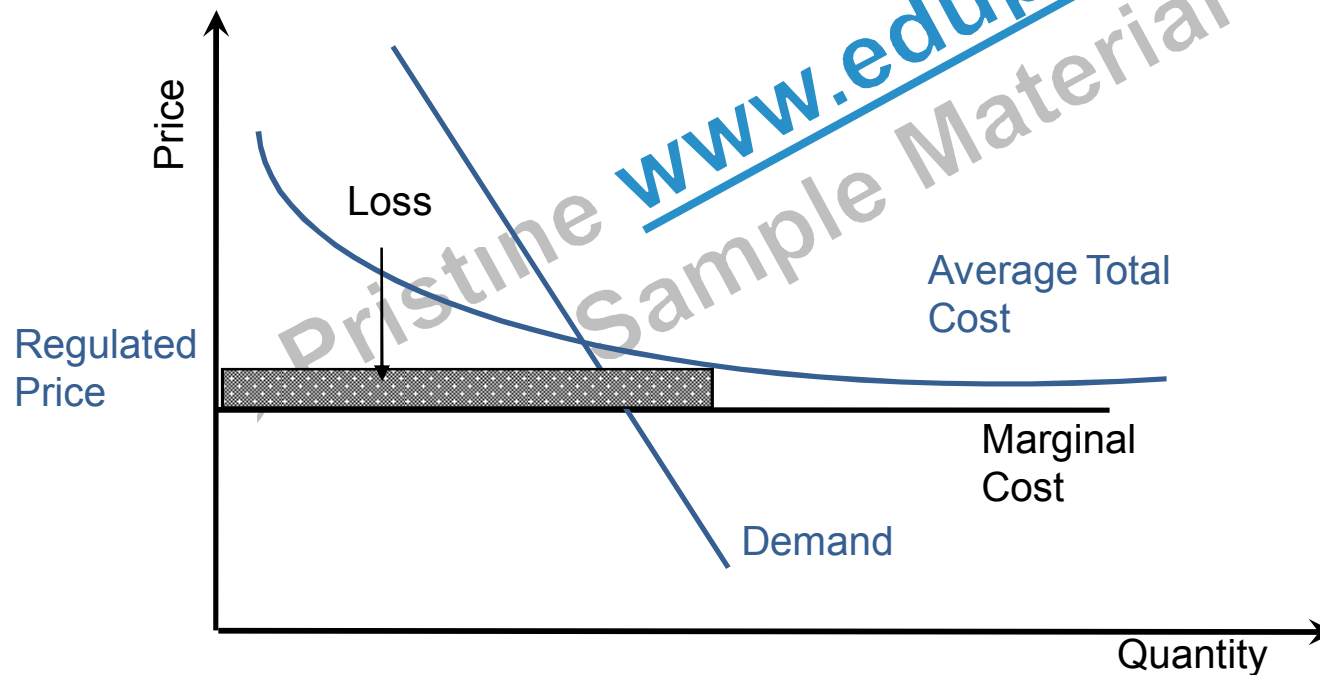
- Average cost pricing is the most common form of regulation
- **Monopolists to reduce price to where ATC intersects the demand curve.**
 - **Ensure normal profit since price = ATC.**
 - Increase output and decrease price.
 - Increase social welfare through allocative efficiency



Average Cost Pricing

Marginal Cost Pricing

- Reduce price to a level where MC curve meets the demand curve,
 - Monopolist incur a loss since price is below ATC
 - increases output and reduces price
 - **Government subsidy** is offered to the firm to compensate for normal profit and prevent it from leaving the market entirely.



Marginal Cost Pricing

Regulation of Monopoly

- Regulators sometimes go astray and faces following problems
 - **Lack of information:** firm's ATC, MC, or demand schedule.
 - **Difficult to regulate quality:** Firm starts reducing the quality of the good or service which is difficult to monitor
 - **Special interest effects:** Firm try to influence regulation by political manipulation designed to influence the composition & decisions of the regulatory board.
 - **Cost shifting:** Firm has no incentive to reduce costs, since this will cause the regulators to reduce price.

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