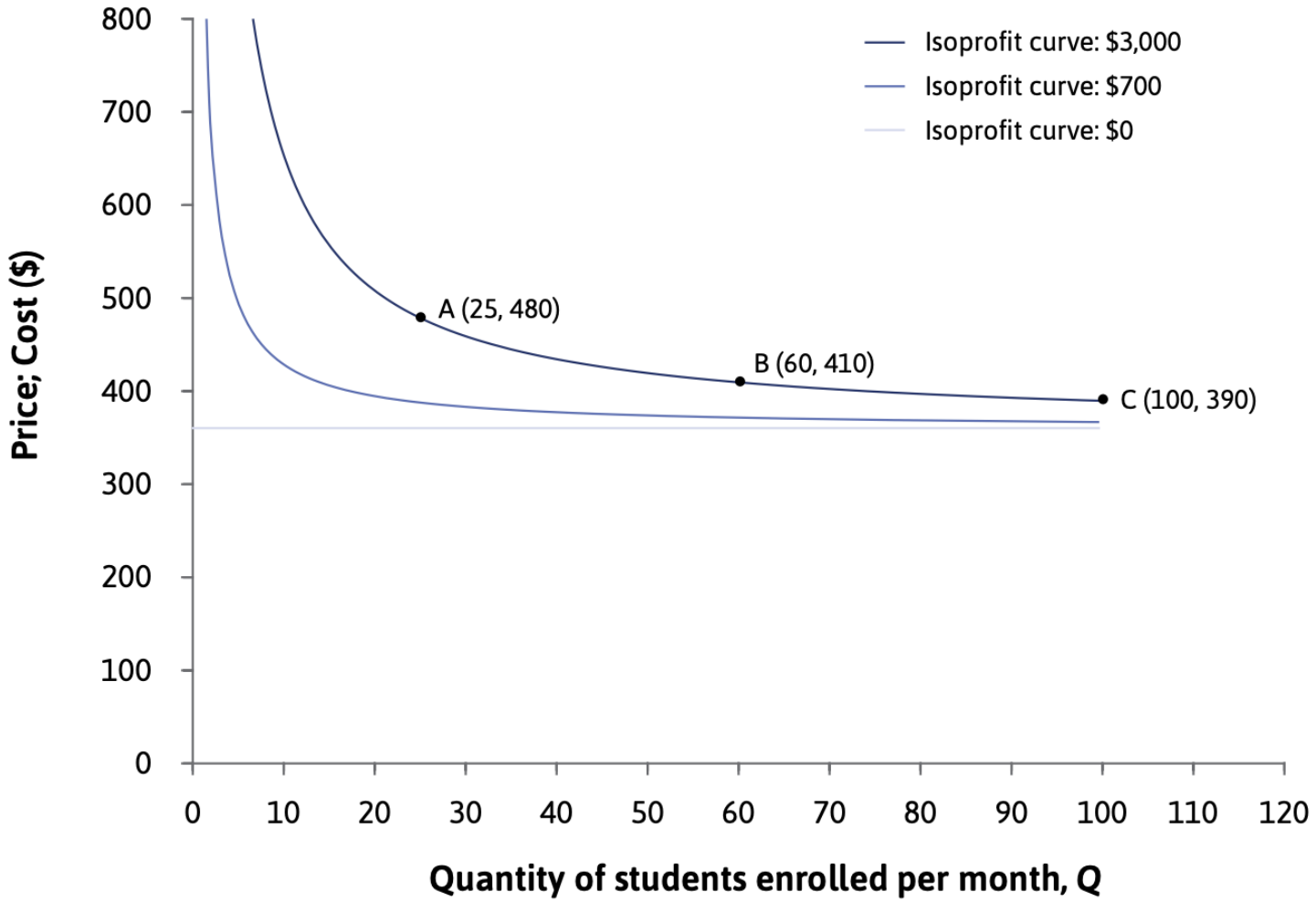
ECO111 : Lecture 27

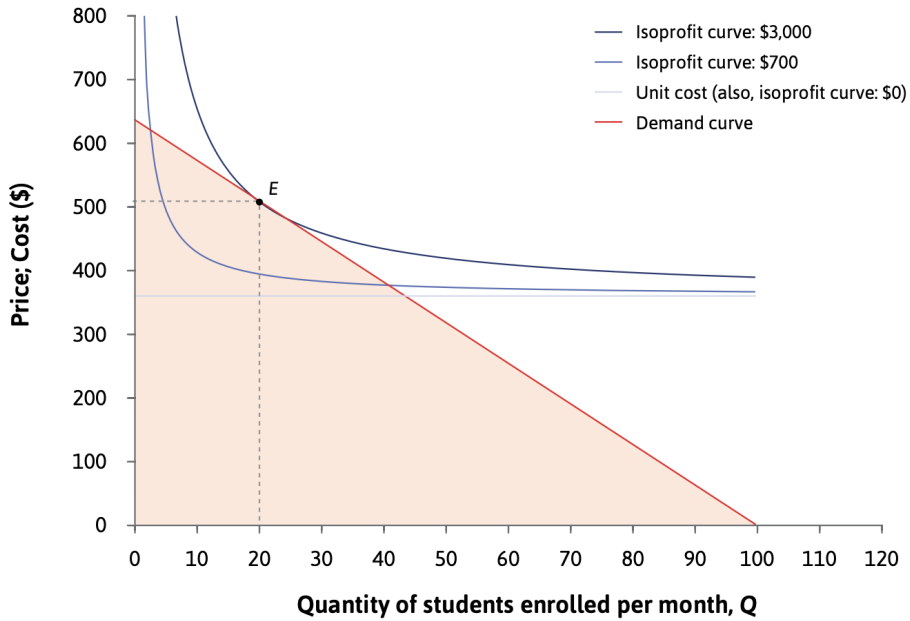
16 October 2024

Isoprofit Curve



The Isoprofit Curve & the Demand Curve

- Here the producer would prefer to be on the highest possible isoprofit curve.
- Producer's choice of price and quantity to be produced is constrained by the demand curve of the consumers.

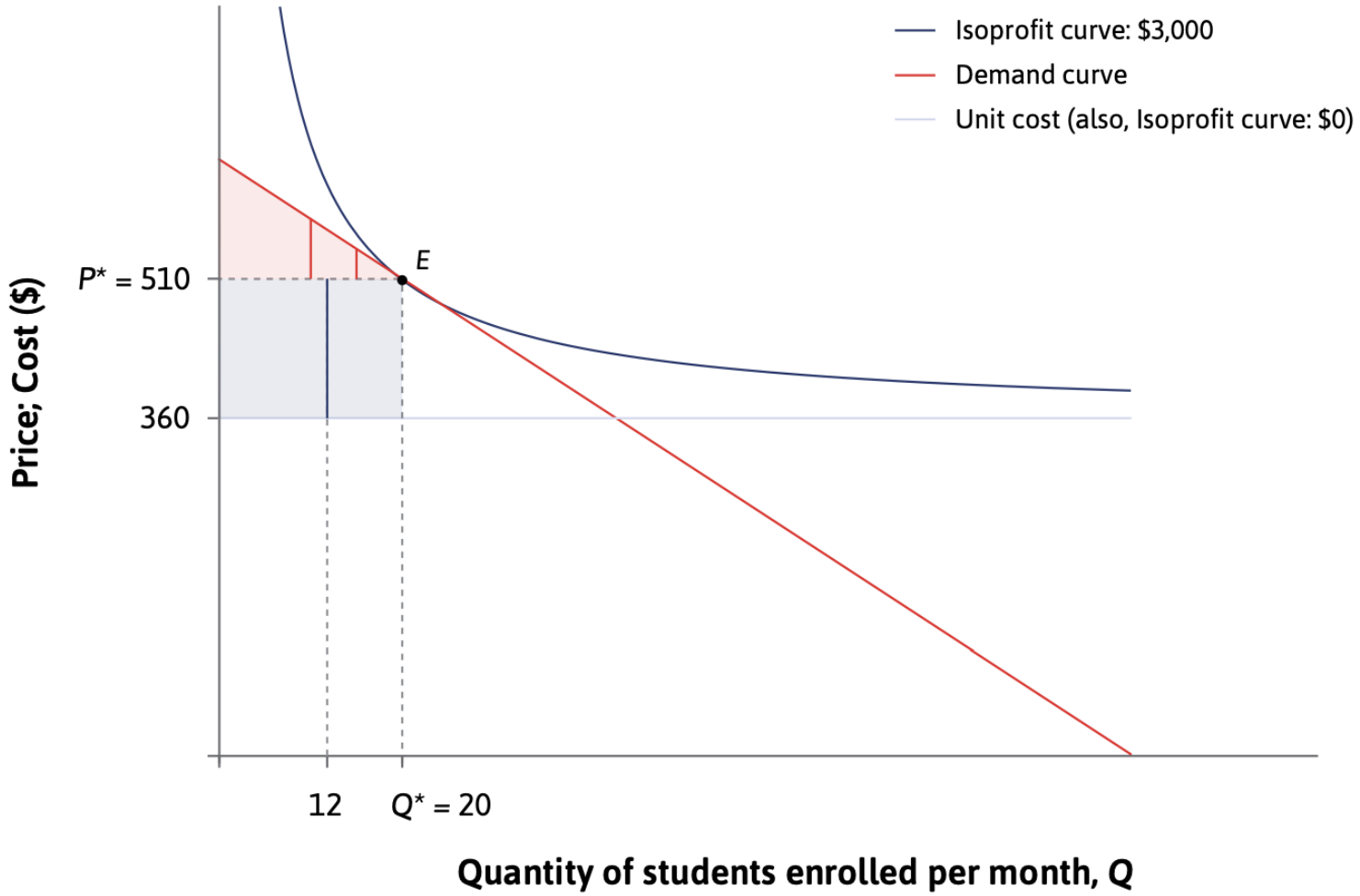


- At profit maximum, slope of the demand curve (MRT for the producer) = slope of the isoprofit curve (MRS for the producer, i.e., how price is tranformed for quantity)

Gains from Trade

- *Economic rent* is a payment or benefit received above and beyond what the individual would have received in their next best option / reservation option.
- *Gains from exchange* are the benefits that each party gains from a transaction compared to how they would have fared without the exchange.
- *Total surplus* are the gains received by all parties in the trade. It is measured as the sum of the consumer surplus and producer surplus.
- A firm's owner decides how many units to produce.
- *Given the decision of the producer, the consumers decides at what point to consume on the demand curve.*
- In these trade interactions there are potential gains for both the producer and consumers as long as the producer produces at a cost less than the willingness to pay of the consumers.
- A consumer whose WTP is higher than the price at which the good is offered, gains from the trade or receives surplus from trade.
- The producer whose unit cost is less than the price receives a surplus from trade too.

Consumer & Producer Surplus



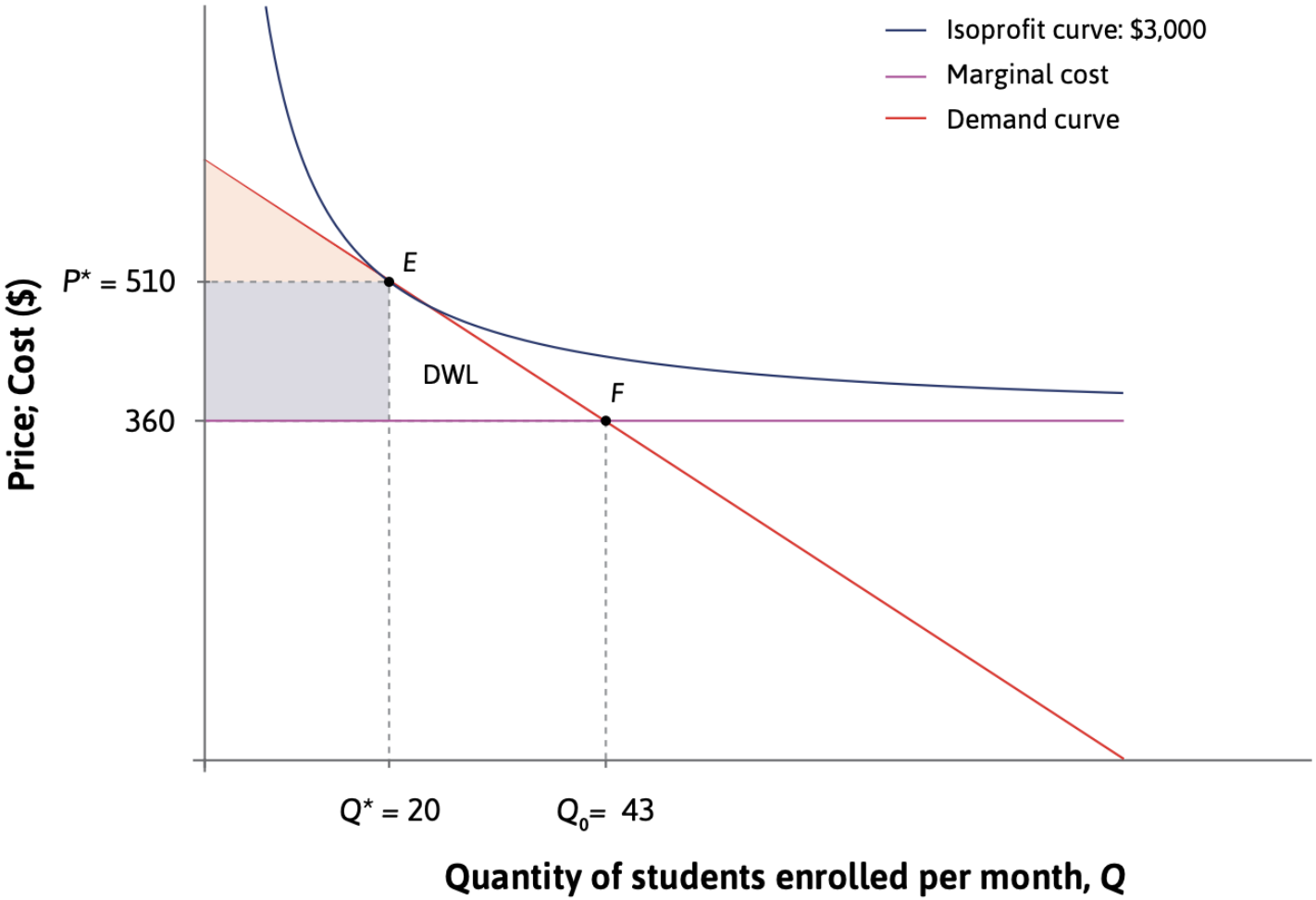
Consumer & Producer Surplus

- The optimal point of production for the firm is E, at price $P^* = 510$ for a quantity $Q^* = 20$.
- For any consumption above the point E on the demand curve, the consumer's WTP is higher than P^*. The area under the demand curve and above the price P^* constitutes the consumer surplus.
- The producer's cost line is at $P = 360$ as it is the point at which Total Profit $= 0$.
- Therefore, the area above the cost line and below the price P^* at which the producers sell Q^* is the producer's surplus.
- In this particular example we see that the producer's surplus $>$ consumer's surplus. The relative share of consumer and producer surplus actually depends on the bargaining power of the parties involved.

Pareto Efficiency Criterion

- Is the above allocation at price P^* and quantiy Q^* pareto efficient?
- If there is any other price-quantity combination within the demand curve (which is the feasible curve for the producer) and above the cost curve that leads to at least one of the parties being better off without making the other party worse-off, then the P-Q allocation won't be Pareto efficient.
- In between the points E and F on the graph we see that there are consumers, who have a WTP greater than the unit cost of production = \$360. Here we have the marginal cost of production the same as unit cost.
- Marginal cost is the cost required to produce one additional unit of ooutput.

Pareto Efficiency & Deadweight Loss



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- Suppose, the producer can price discriminate, that is charge each consumer their WTP then the producer can gain from that trade as long as the WTP is higher than the marginal cost.
- The consumer who earlier could not consume, as their WTP is lower than P^* but greater than \$360 can now consume if the firm were to price discriminate.
- So, while all the consumers whose WTP is above \$510 continues to be charged P^*, the consumer whose willingness to pay is below \$510 and above \$360 can be charged their respective WTP.
- This price discrimination leads to the producer's surplus increasing while the consumers also gain. This is a Pareto improvement over the allocation at the point E.
- As long as the firm does not produce at F, where the marginal cost of production = the WTP of the consumer at that point, the P-Q allocation is not Pareto efficient.
- In the event, the firm produces less than at Q_0 there is some gains from trade that is left unallocated to anyone. This is called the *deadweight loss.*
- Deadweight loss is the loss of total surplus relative to a Pareto efficient allocation.

Price Setting, Market Power, & Public Policy

- *Perfect competition* is a market structure where there are n firms producing the same commodity. Firms are price takers.
- A *monopoly* market is a market in which a firm is the only seller of a product without close substitutes.
- A *monopolistic competition* is a market in which each seller has a unique product but there is competition among firms because firms sell products that are close substitutes for one another.
- *Oligopoly* is a market with a small number of sellers of the same good, giving each seller some market power.
- When markets allocate resources in a Pareto inefficient way, it is called a *market failure.*
- The earlier situation where the producer of a differentiated good sets a price above the marginal cost, is not Pareto efficient, and hence is a market failure.