ECO101: Introduction to Microeconomics

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TOPIC: PERFECT COMPETITION

Perfect Competition

- **Perfect competition** is a market in which
  - Many firms sell identical products to many buyers.
  - There are no restrictions on entry into the market.
  - Established firms have no advantage over new ones.
  - Sellers and buyers are well informed about prices.
- Perfect competition arises if the minimum efficient scale of a single producer is small relative to the market demand for the good or service.
- In perfect competition, each firm produces a good that has no unique characteristics, so consumers don't care which firm's good they buy.

Characteristics of Perfect Competition

- Firms in perfect competition are price takers. **Price taker** is a firm that cannot influence the market price because its production is an insignificant part of the total market.
- Total revenue is equal to the price multiplied by the quantity sold. The total revenue curve is an upward-sloping straight line.
- Marginal revenue is the change in total revenue that results from a one-unit increase in quantity sold.
- The firm in perfect competition is a price taker, the change in total revenue that results from a one-unit increase in the quantity sold equals the market price.
- *In perfect competition, the firm's marginal revenue equals the market price.* The firm's marginal revenue curve (*MR*) as the horizontal line at the market price.
- The demand curve in Perfect competition is a horizontal line, because it is perfectly elastic.

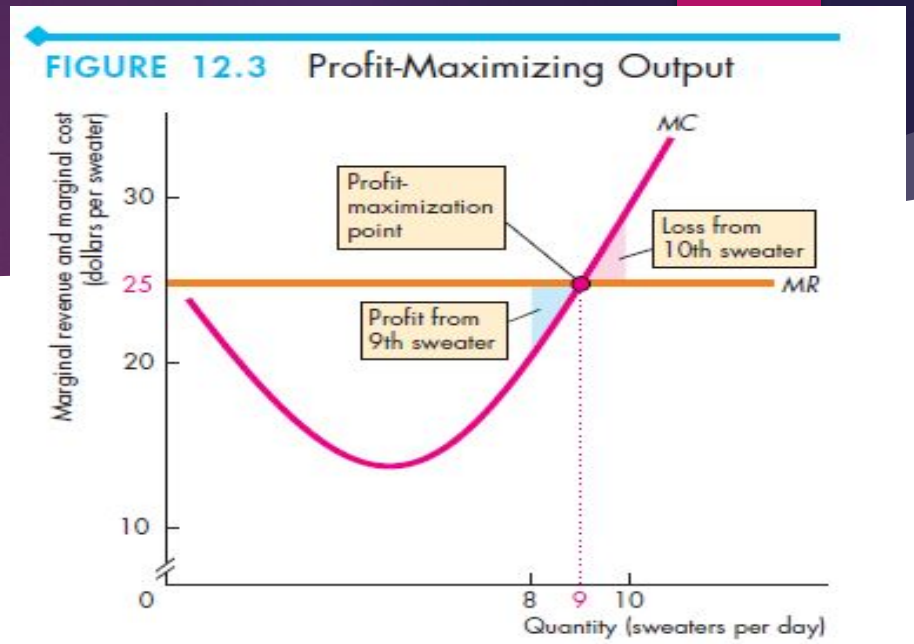
The Firm's Output Decisions

- The goal of the competitive firm is to maximize economic profit, given the constraints it faces.
- As output increases, the firm's marginal revenue is constant but its marginal cost eventually increases.
- If $MR > MC$, then the revenue from selling one more unit exceeds the cost of producing it. So, the firm makes an economic profit on the marginal unit.
  - Economic profit increases as output increases
- If $MR < MC$, then the revenue from selling one more unit is less than the cost of producing that unit. The firm incurs an economic loss on the marginal unit.
  - Economic profit decreases as output increases.
- Marginal revenue equals marginal cost ($MR = MC$), then the revenue from selling one more unit equals the cost incurred to produce that unit.

Profit-maximizing Output

- Marginal revenue equals marginal cost (*MR* = *MC*), then the revenue from selling one more unit equals the cost incurred to produce that unit.

- Till when should the firm produce?
  - MR= MC
  - MR<MC
  - MR<MC



Quantity (*Q*) (sweaters per day)	Total revenue (*TR*) (dollars)	Marginal revenue (*MR*) (dollars per additional sweater)	Total cost (*TC*) (dollars)	Marginal cost (*MC*) (dollars per additional sweater)	Economic profit (*TR* – *TC*) (dollars)
7	175	25	141	19	34
8	200	25	160	23	40
9	225	25	183	27	42
10	250	25	210	35	40
11	275		245		30

Some important concepts

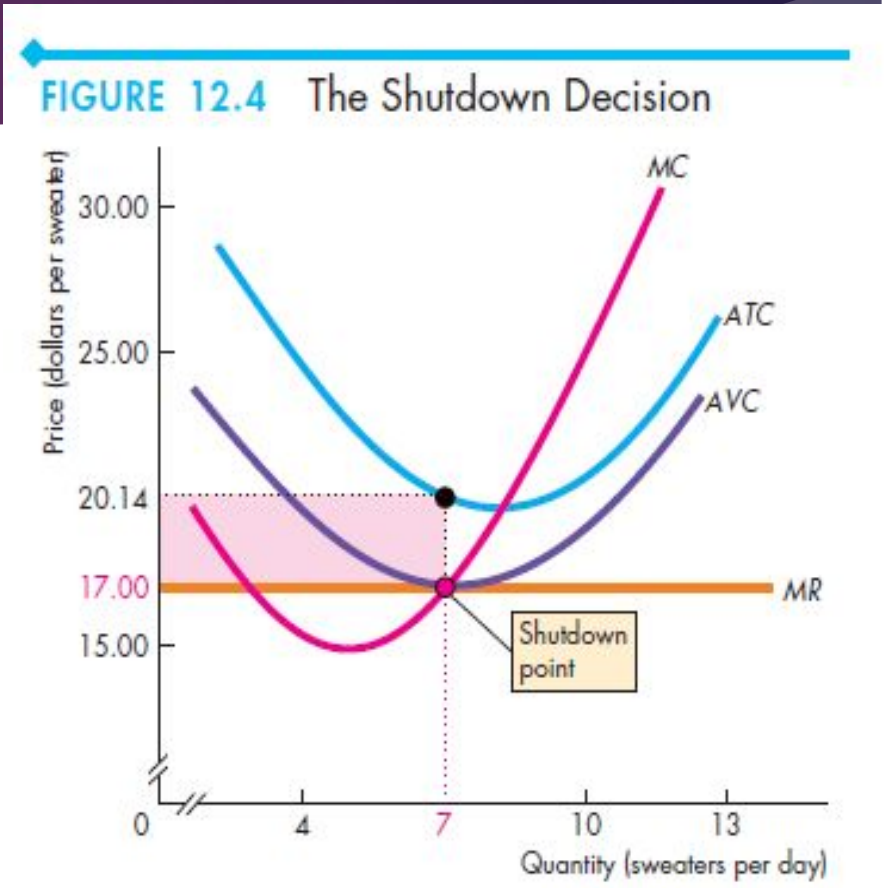
- Total Revenue (TR) = Price x Quantity
- Marginal Revenue , MR= Change in TR/ Change in quantity
- Economic Profit= TR- TC
- The point where a firm makes zero economic profit, is called a break-even point.
- The firm maximizes profit by producing the quantity at which marginal revenue (price) equals marginal cost (MC = MR)

Temporary Shutdown Decision

- Suppose that at the profit maximizing quantity, price is less than average total cost , then the firm incurs an economic loss.
- Maximum profit is a loss, What does the firm do?
- If the firm expects the loss to be permanent, it goes out of business.
- But if it expects the loss to be temporary, the firm must decide whether to shut down temporarily and produce no output, or to keep producing.
- To make this decision, the firm compares the loss from shutting down with the loss from producing and takes the action that minimizes its loss.

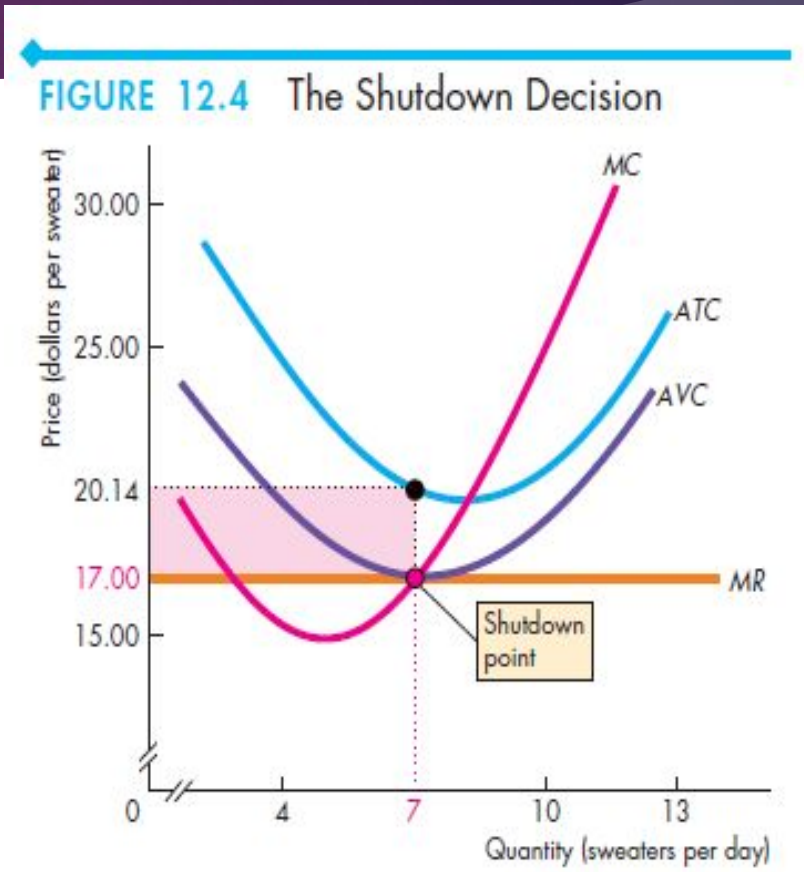
The Shutdown Decision

- Economic loss = $TFC + (AVC - P) * Q$
- *Economic loss* = $TFC + TVC - TR$
- If the firm shuts down, then $Q = 0$. The firm has no variable costs and no revenue but it must pay its fixed costs, so its economic loss equals total fixed cost.
- If the firm produces, its economic loss equals total fixed cost—the loss when shut down—plus total variable cost minus total revenue.
- If TVC > TR , this loss exceeds total fixed cost and the firm shuts down.
- A firm's **shutdown point** is the price and quantity at which it is indifferent between producing and shutting down.



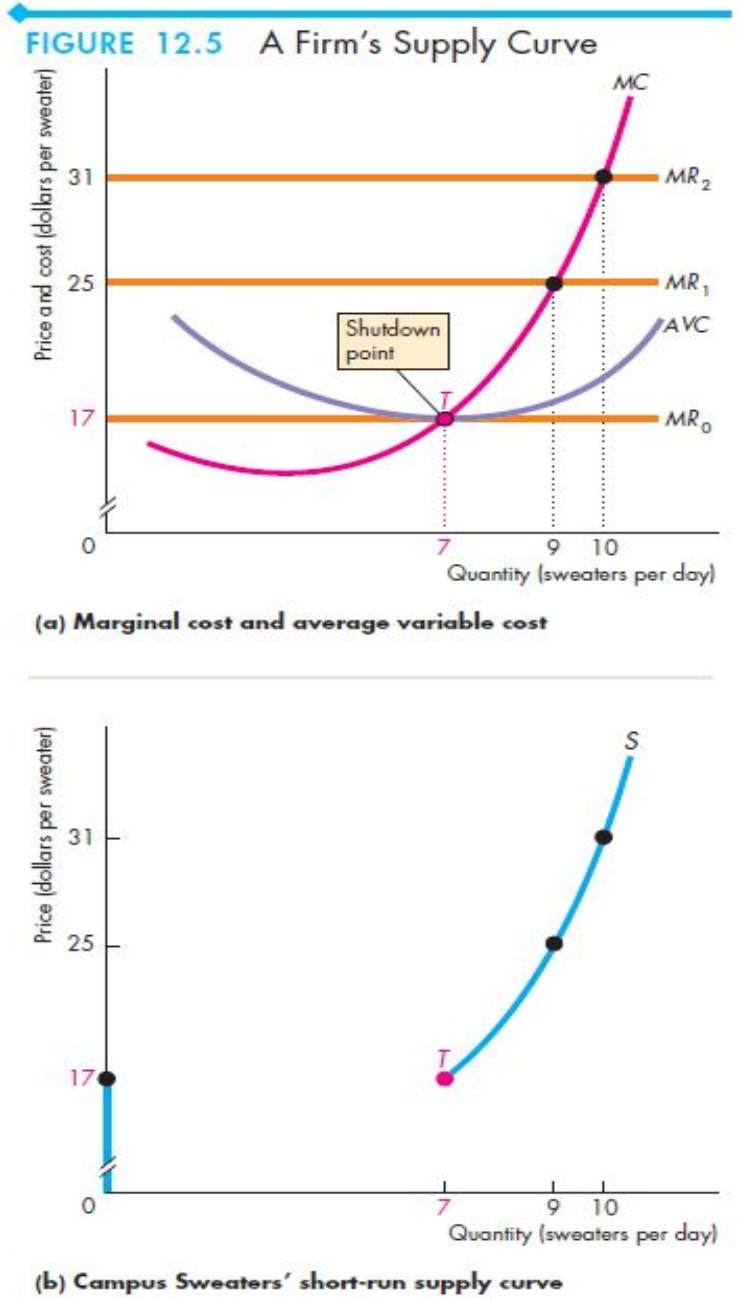
The Shutdown Point

- The shutdown point occurs at the price and the quantity at which average variable cost is a minimum.
- At the shutdown point, the firm is minimizing its loss and its loss equals total fixed cost.
- If the price falls below minimum average variable cost, the firm shuts down temporarily and continues to incur a loss equal to total fixed cost.
- At prices above minimum average variable cost but below average total cost, the firm produces the loss-minimizing output and incurs a loss, but a loss that is less than total fixed cost.



The Firm's Supply Curve

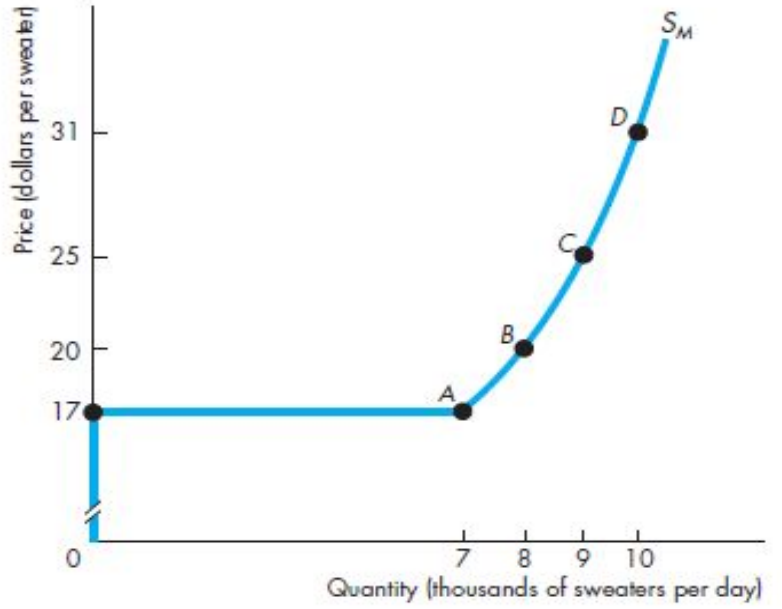
- The supply curve is derived from the firm's marginal cost curve and average variable cost curves.
- When the P = minimum AVC, the firm maximizes profit *either* by temporarily shutting down and producing no output
- *Or* by producing the output at which average variable cost is a minimum—the shutdown point, *T*
- The firm never produces a quantity between zero and the quantity at the shutdown point *T*.



Output, Price and Profit in the Short-Run

- The **short-run market supply curve** shows the quantity supplied by all the firms in the market at each price when each firm's plant and the number of firms remain the same.
- The market supply curve is derived from the individual supply curves. The quantity supplied by the market at a given price is the sum of the quantities supplied by all the firms in the market at that price.

FIGURE 12.6 Short-Run Market Supply Curve

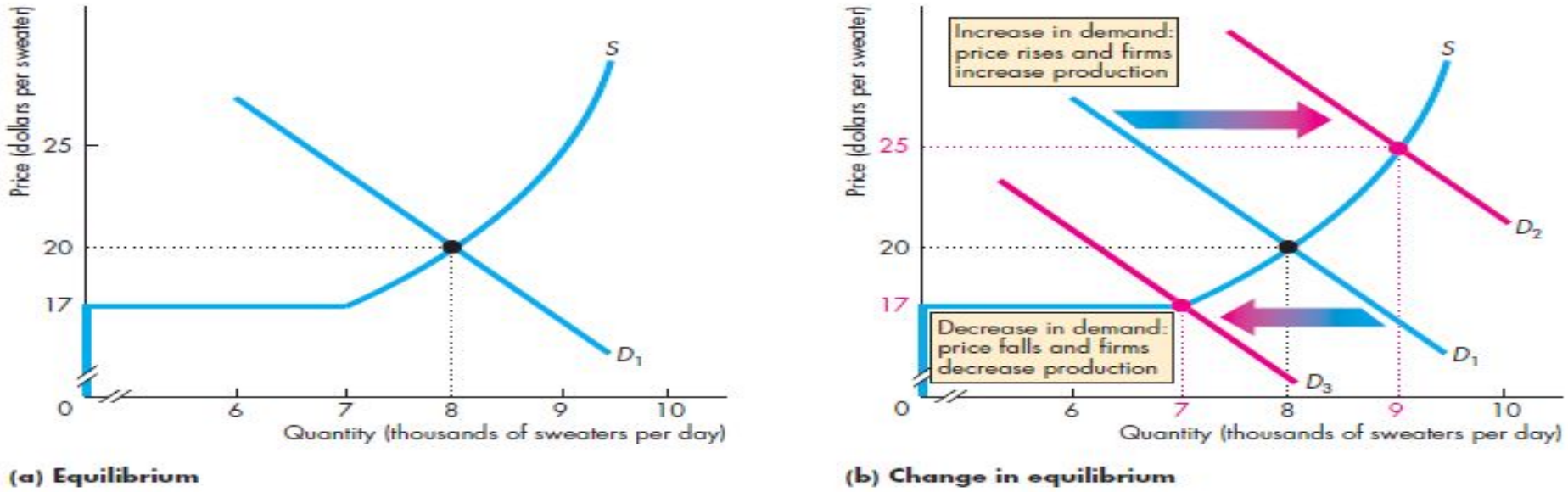


	Price (dollars per sweater)	Quantity supplied by Campus Sweaters (sweaters per day)	Quantity supplied by market (sweaters per day)
A	17	0 or 7	0 to 7,000
B	20	8	8,000
C	25	9	9,000
D	31	10	10,000

Short-Run Equilibrium

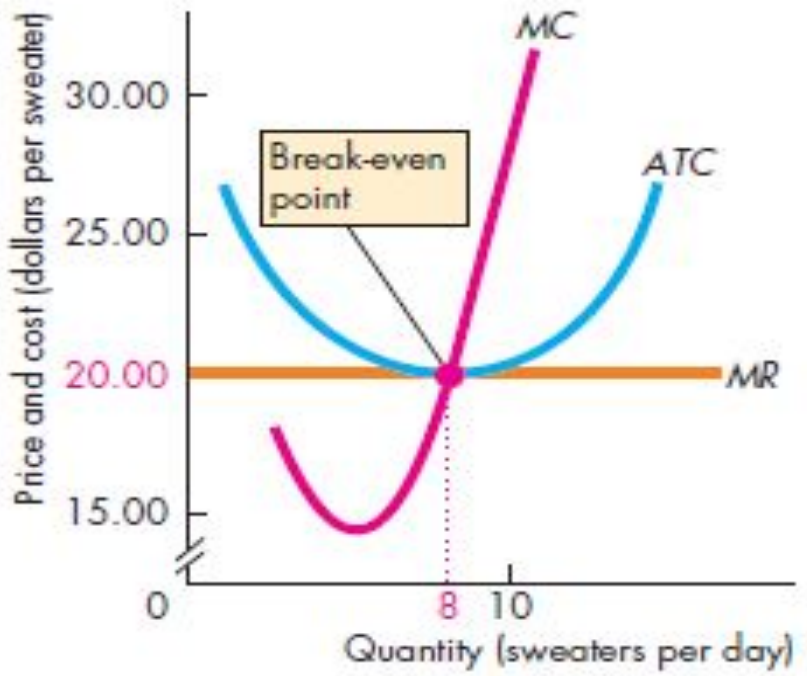
- Market demand and short-run market supply determine the market price and market output.

FIGURE 12.7 Short-Run Equilibrium



Profits and Losses in the Short-Run

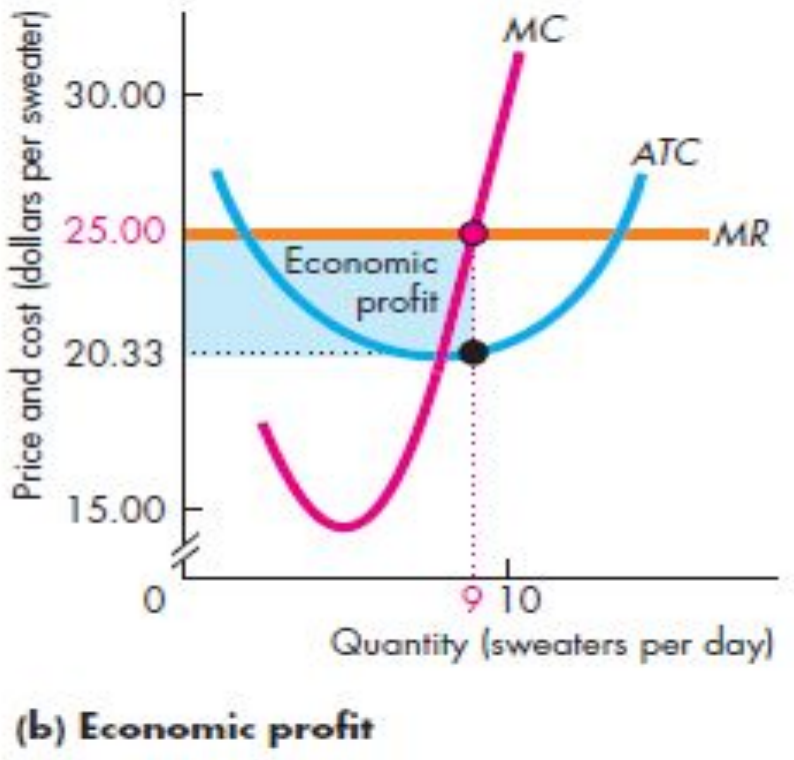
- In short-run equilibrium, although the firm produces the profit-maximizing output, it does not necessarily end up making an economic profit.
- It might do so, but it might alternatively break even or incur an economic loss.
- Economic profit (or loss) = $(P - ATC) \cdot Q$.
- If P=ATC, a firm breaks even- the entrepreneur makes normal profit
- If P > ATC, a firm makes an economic profit.
- If P < ATC, a firm incurs an economic loss.



(a) Break even

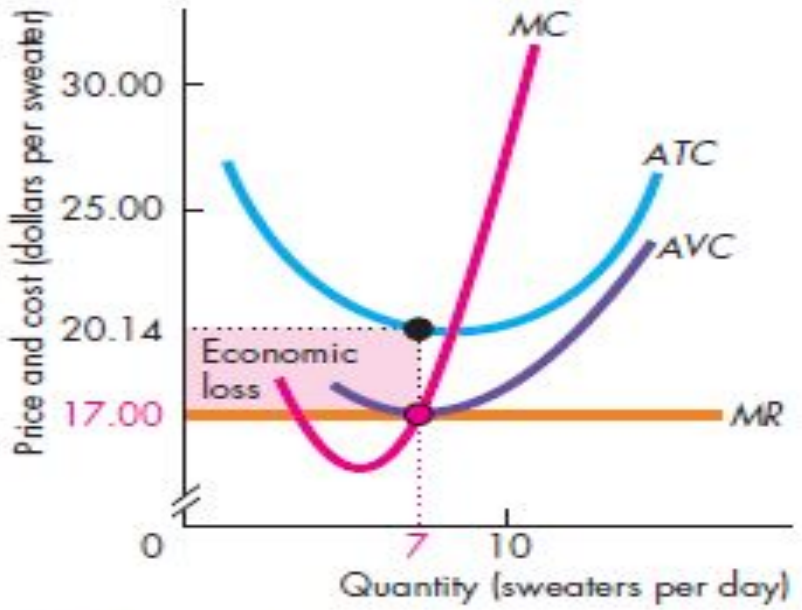
Learn How To Calculate this Profit/ Loss from the book

Economic Profit



(b) Economic profit

Economic Loss



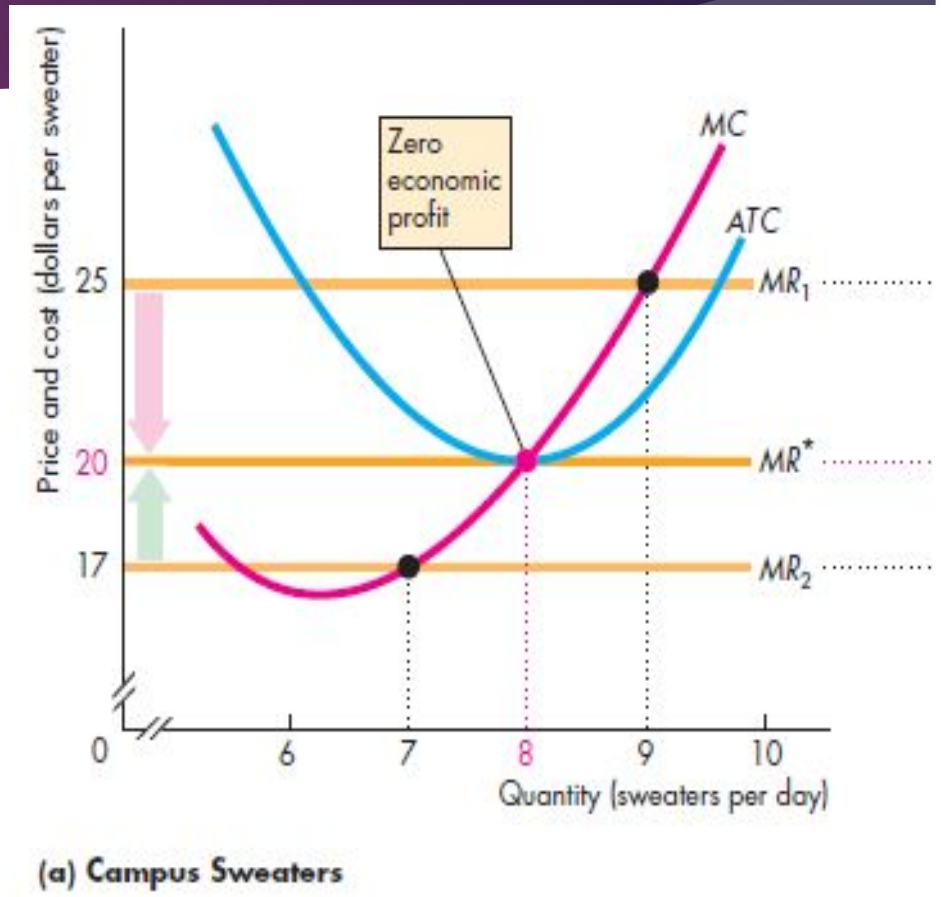
(c) Economic loss

Firm's Long Run Decision to Enter or Exit a Market

- Firm's in the perfect competition cannot influence price but they can influence their cost of production. Hence they would enter if price being charged is greater cost of production.
- A firm will enter the market if P> ATC (The entry criterion)
- A firm's long-run decision to exit a market is similar to it's shut down decision.
- If the firm exits, it will lose all revenue from sale of it's product, but now will save not only it's variable costs of production but also its fixed costs.
- The firm would exit if TR < TC
- The firm exits if total revenue is less than total cost.

Firm's long run decision to exit

- The exit criterion: TR < TC
- By dividing both sides of this inequality by Q, we can write it as,
- TR/Q < TC/Q
- So, P < ATC
- That is, a firm chooses to exit if the price of its good is less than the average total cost of production.
- For long run in the diagram we do not show the AVC anymore, we only focus on the ATC.



(a) Campus Sweaters

To summarize

- New firms enter a market in which existing firms are making an economic profit.
- As new firms enter a market, the market price falls and the economic profit of each firm decreases.
- Firms exit a market in which they are incurring an economic loss.
- As firms leave a market, the market price rises and the economic loss incurred by the remaining firms decreases.
- Entry and exit stop when firms make zero economic profit.

- When economic profit and economic loss have been eliminated and entry and exit have stopped, a competitive market is in ***long-run equilibrium***.