

Profit-Maximization (Short-Run)

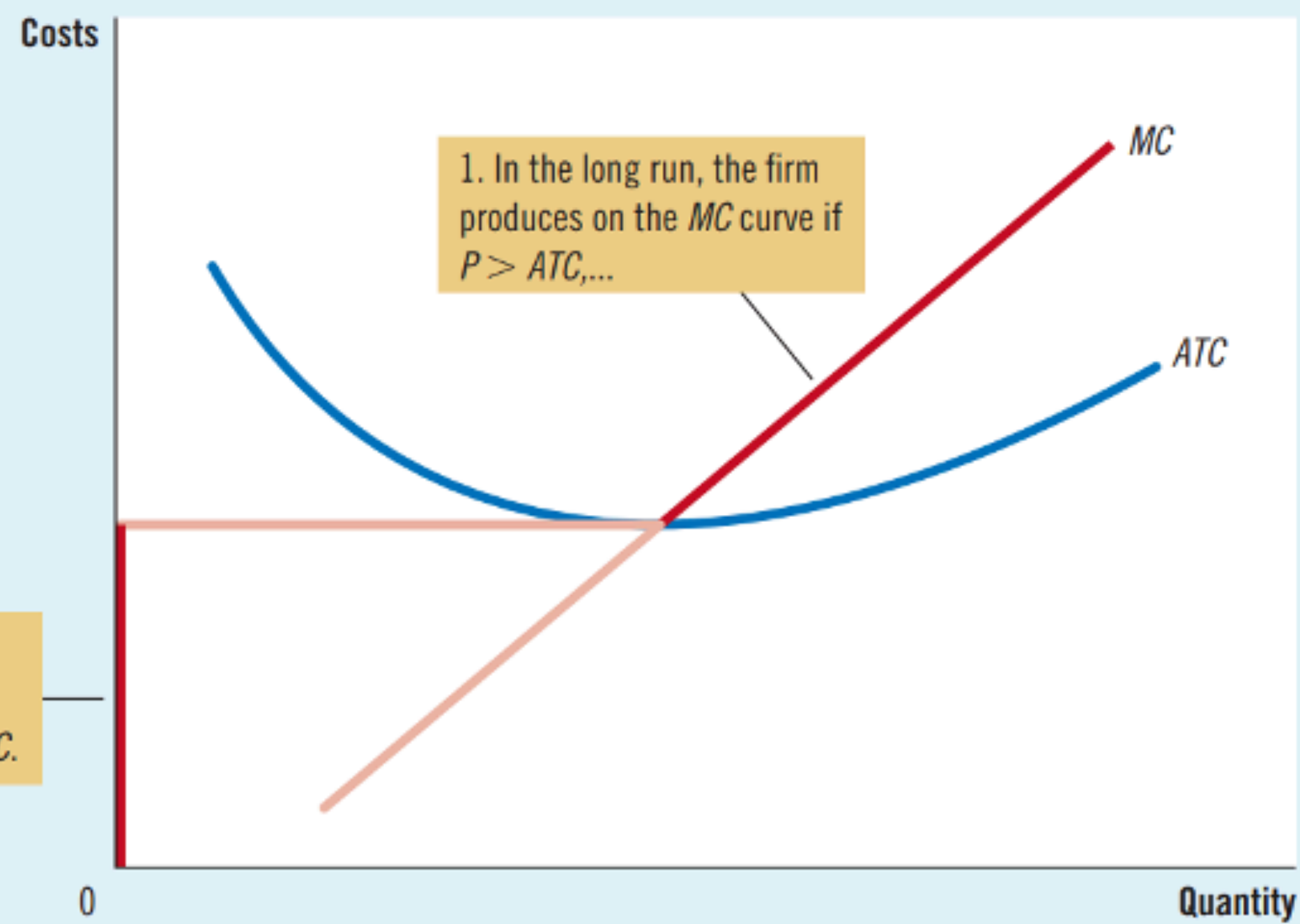
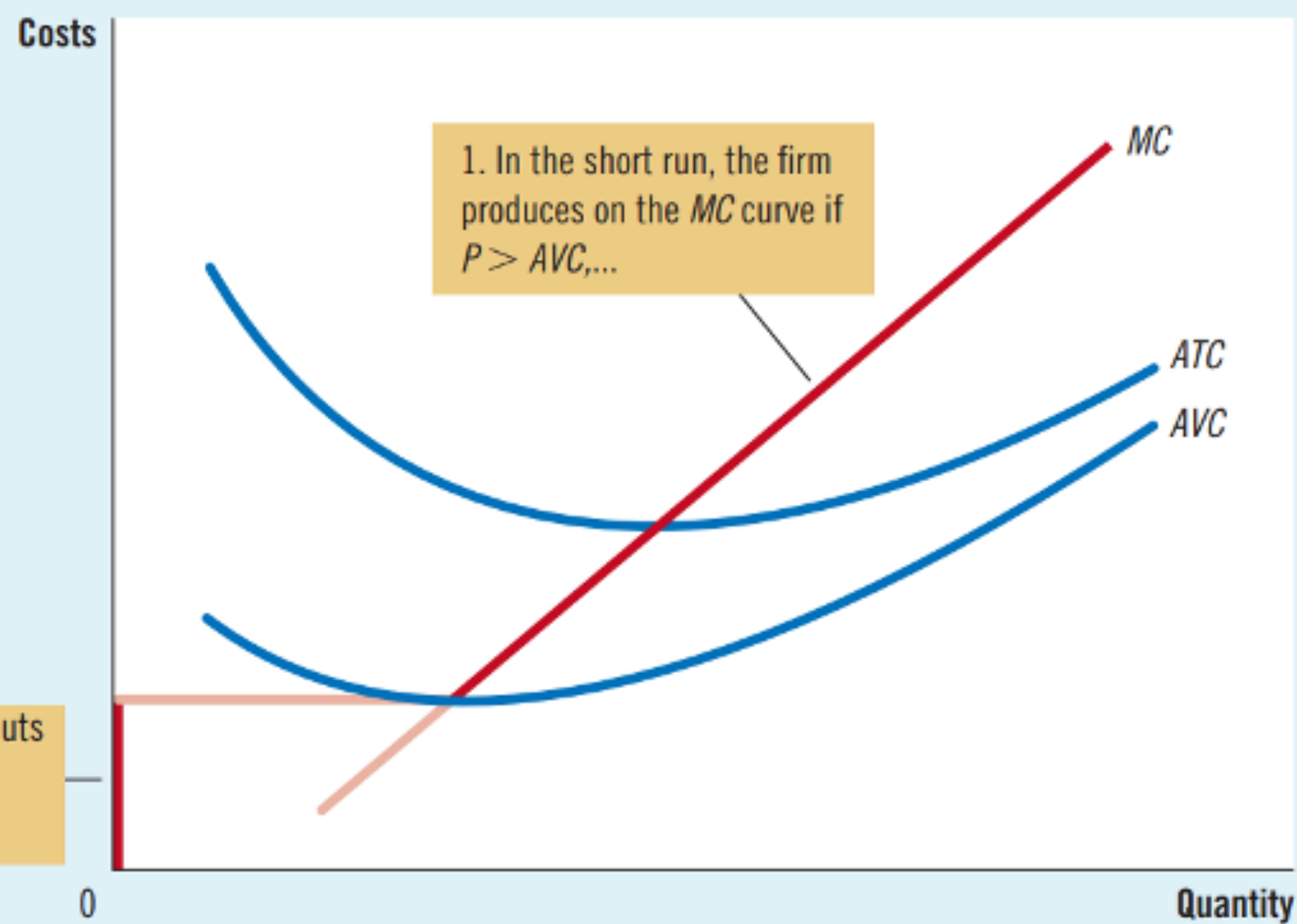
- If **MR > MC**, produce more.
- If **MR < MC**, produce less
- If **MR = MC**, profits have been maximized.
- If **P > AVC**, continue to produce, even if at a loss.
- If **P < AVC**, shutdown temporarily.
- There are both fixed & variable costs.

Profit-Maximization (Long-Run)

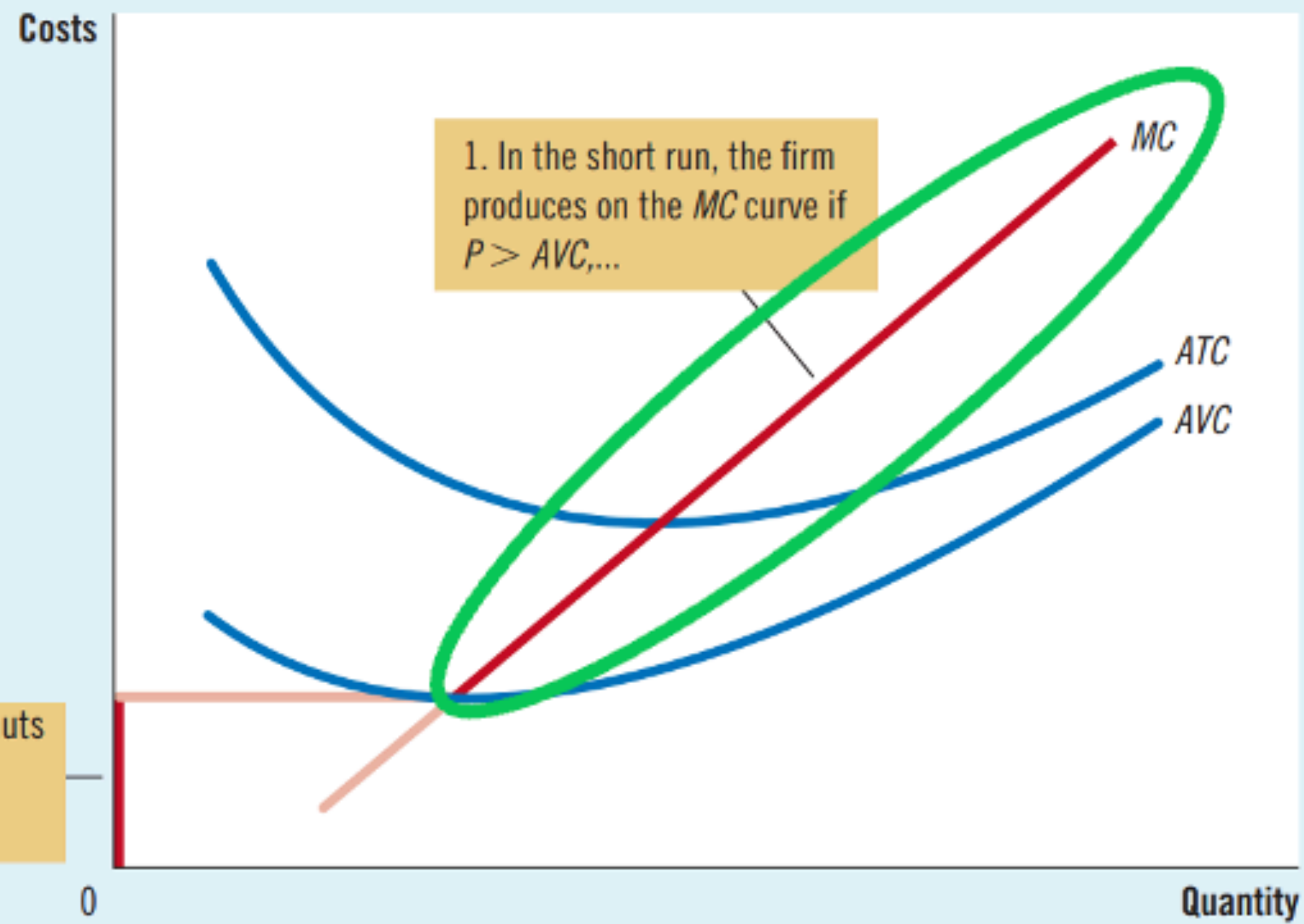
- If **MR > MC**, produce more.
- If **MR < MC**, produce less
- If **MR = MC**, profits have been maximized.
- If **P > ATC**, continue to produce, or enter the industry.
- If **P < ATC**, exit the industry, or don't enter at all.
- All costs are **variable** costs.

Short-Run

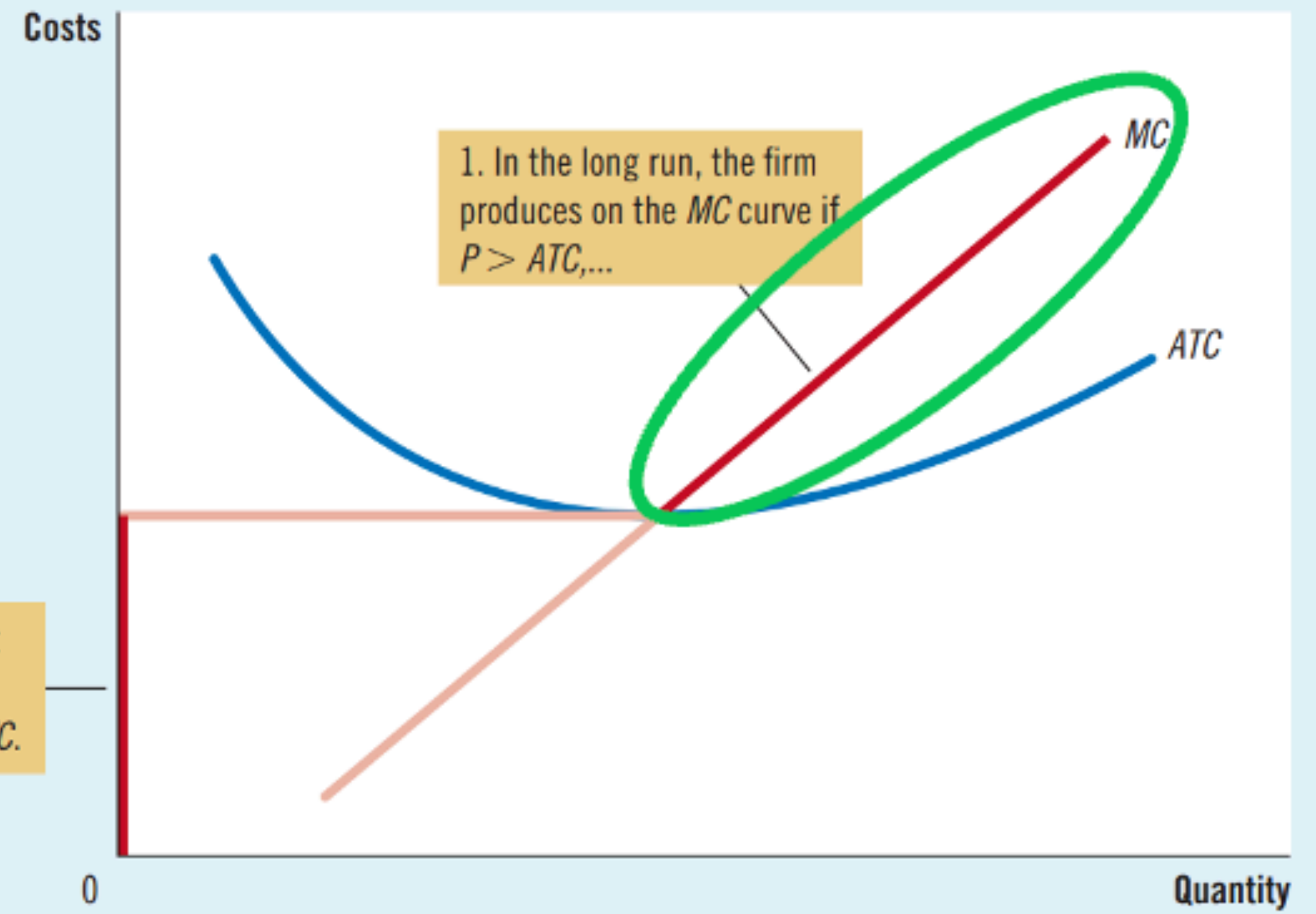
Long-Run



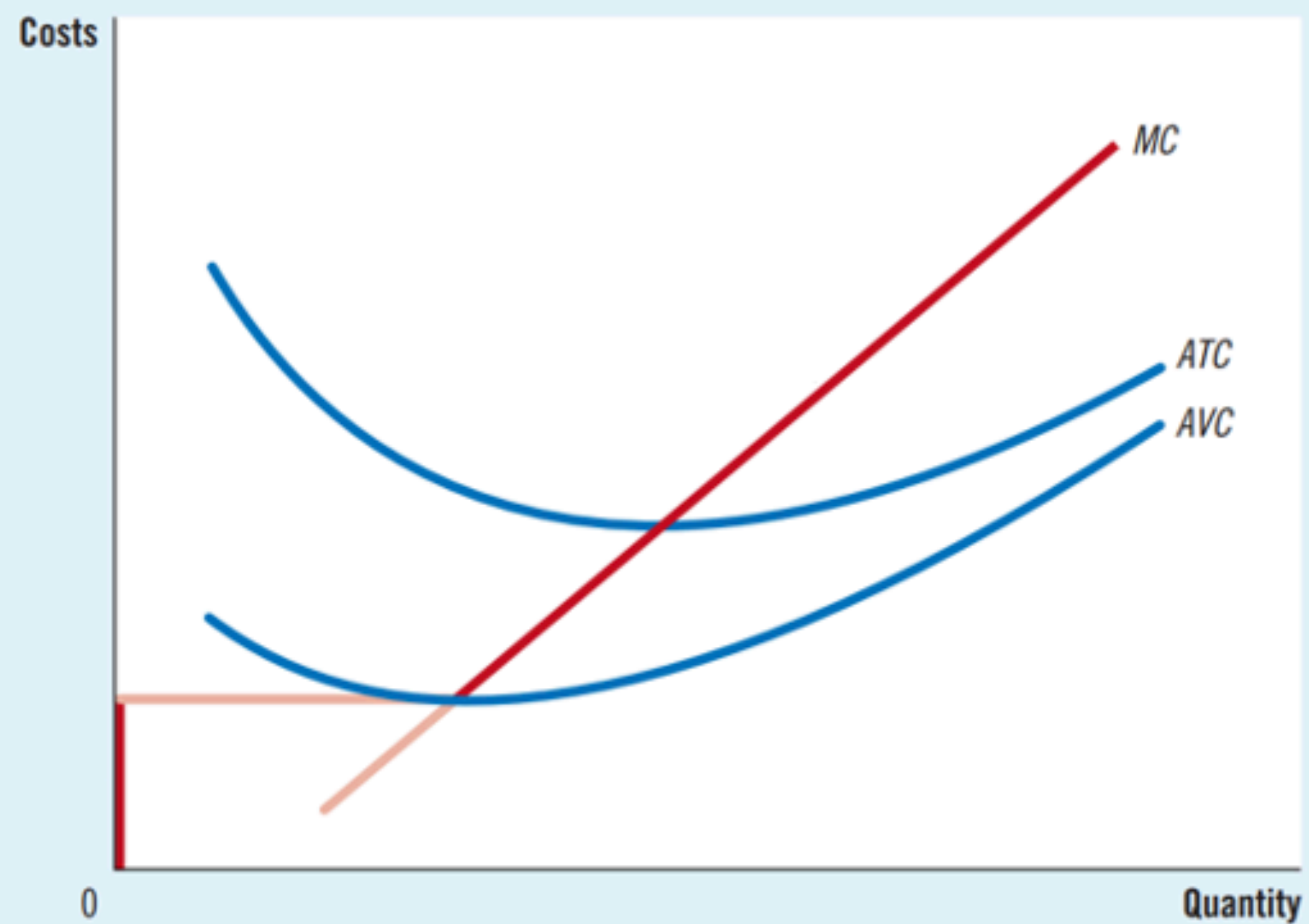
Short-Run



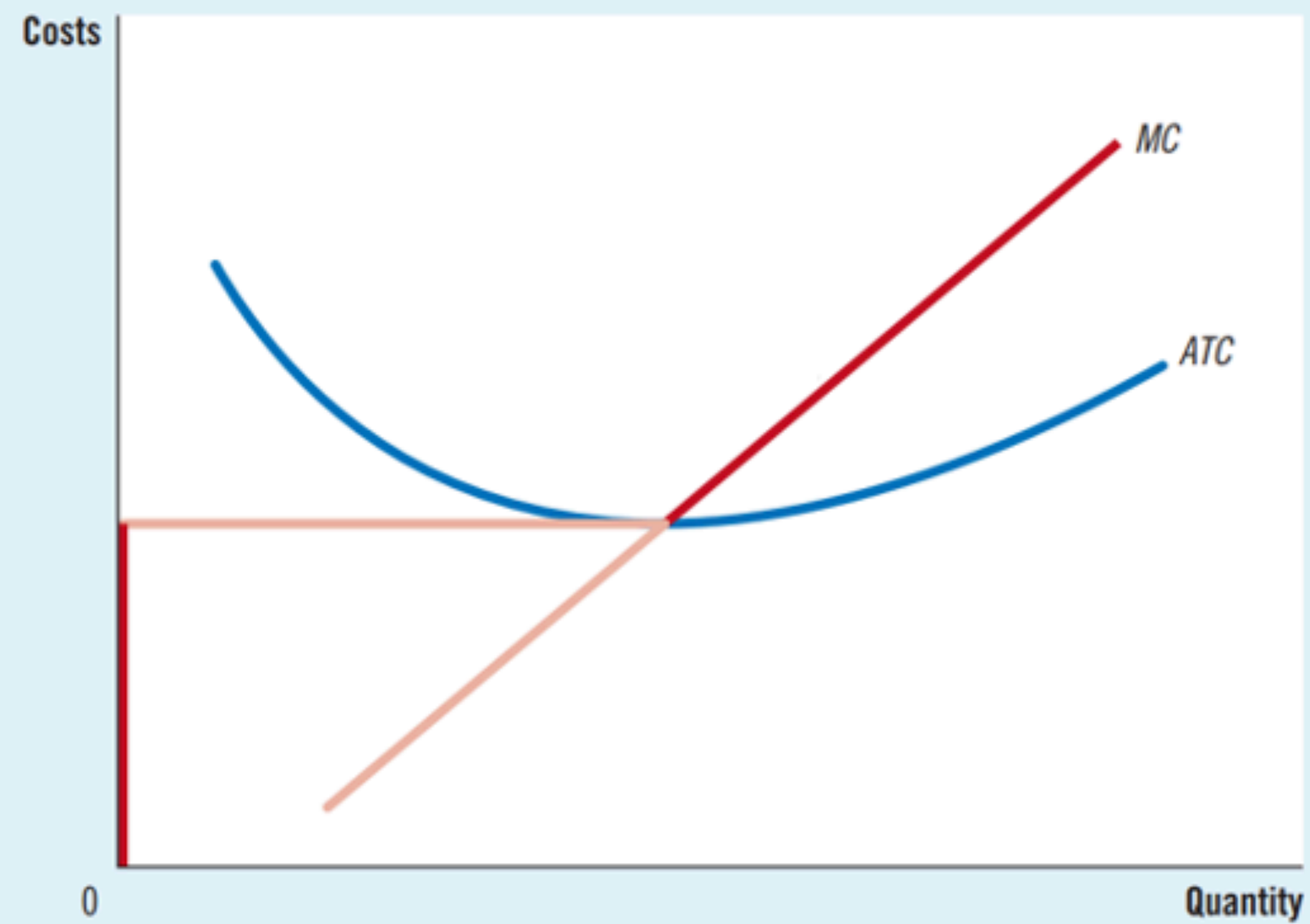
Long-Run



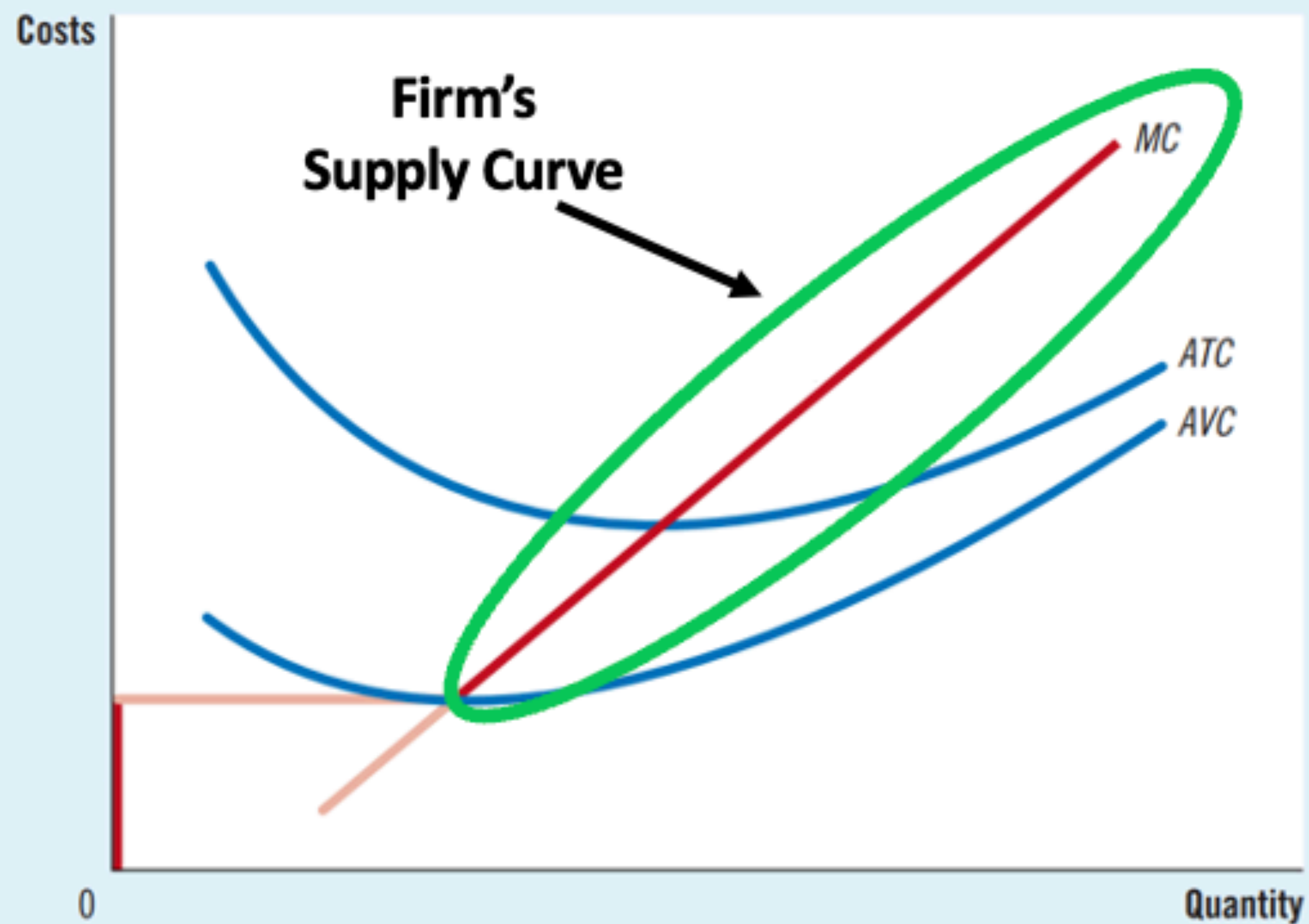
Short-Run



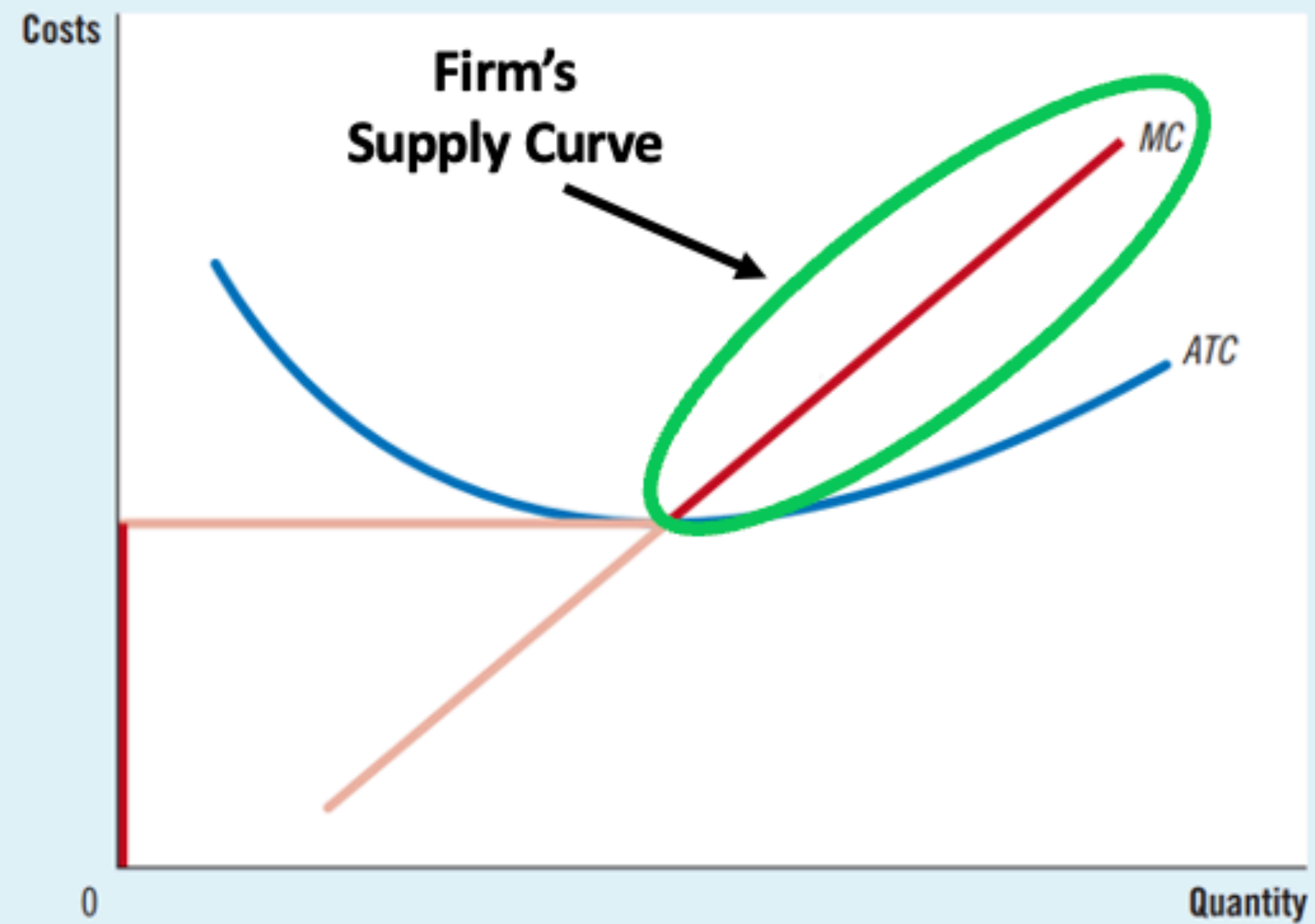
Long-Run



Short-Run



Long-Run



Expanding Our Horizon...

- So far, we've been analyzing the characteristics of individual competitive firms.
- Now, we're going to look at the economic implications of perfect competition in the ***entire market***.

Markets

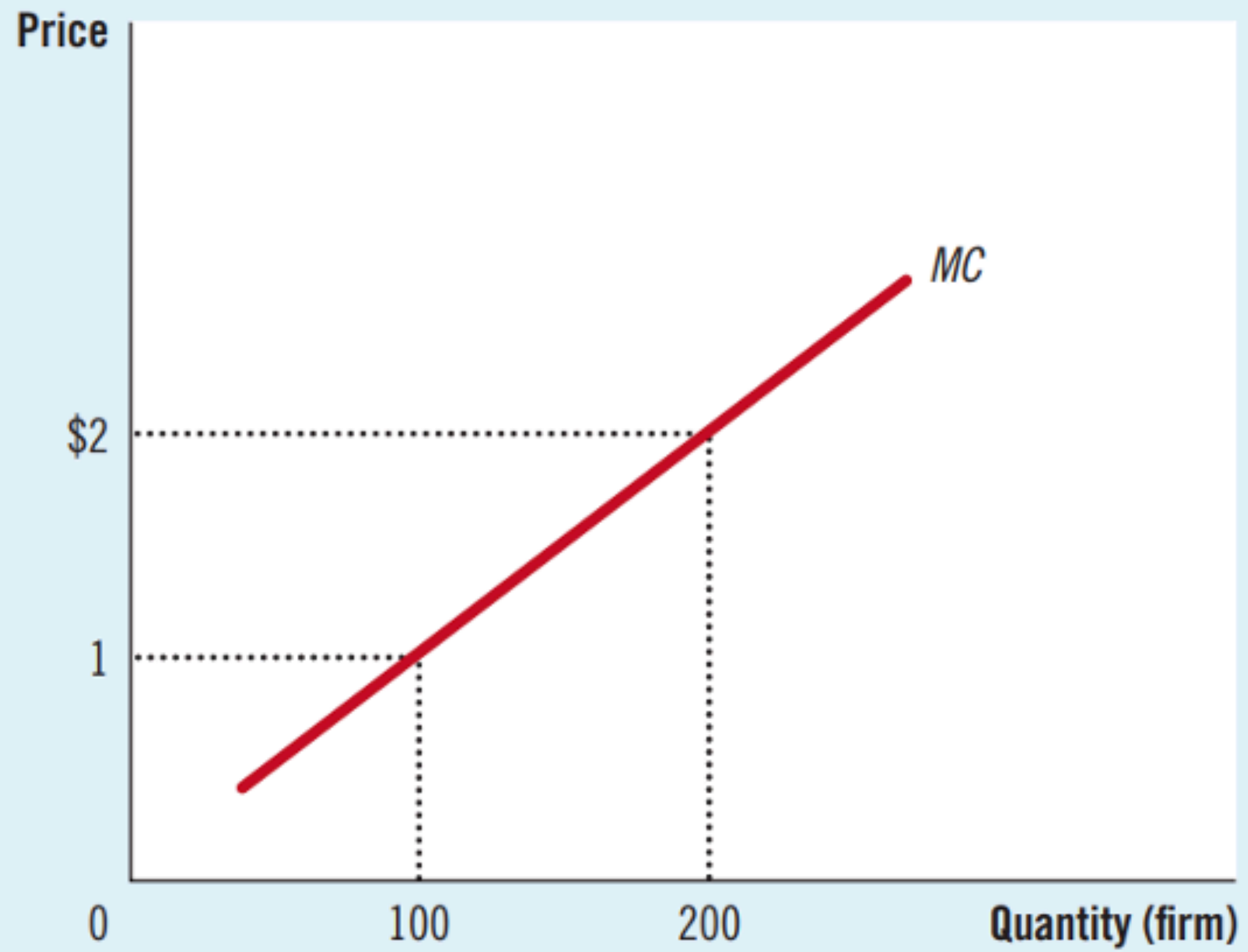
- Assumptions:
 - 1.A market with ***many buyers & sellers***.
 - 2.Trading ***homogenous*** (or very similar/identical) products.
 - 3.Firms are ***price takers*** (they do not set the price).
 - 4.Firms can ***freely enter or exit*** the market (no barriers).

Markets

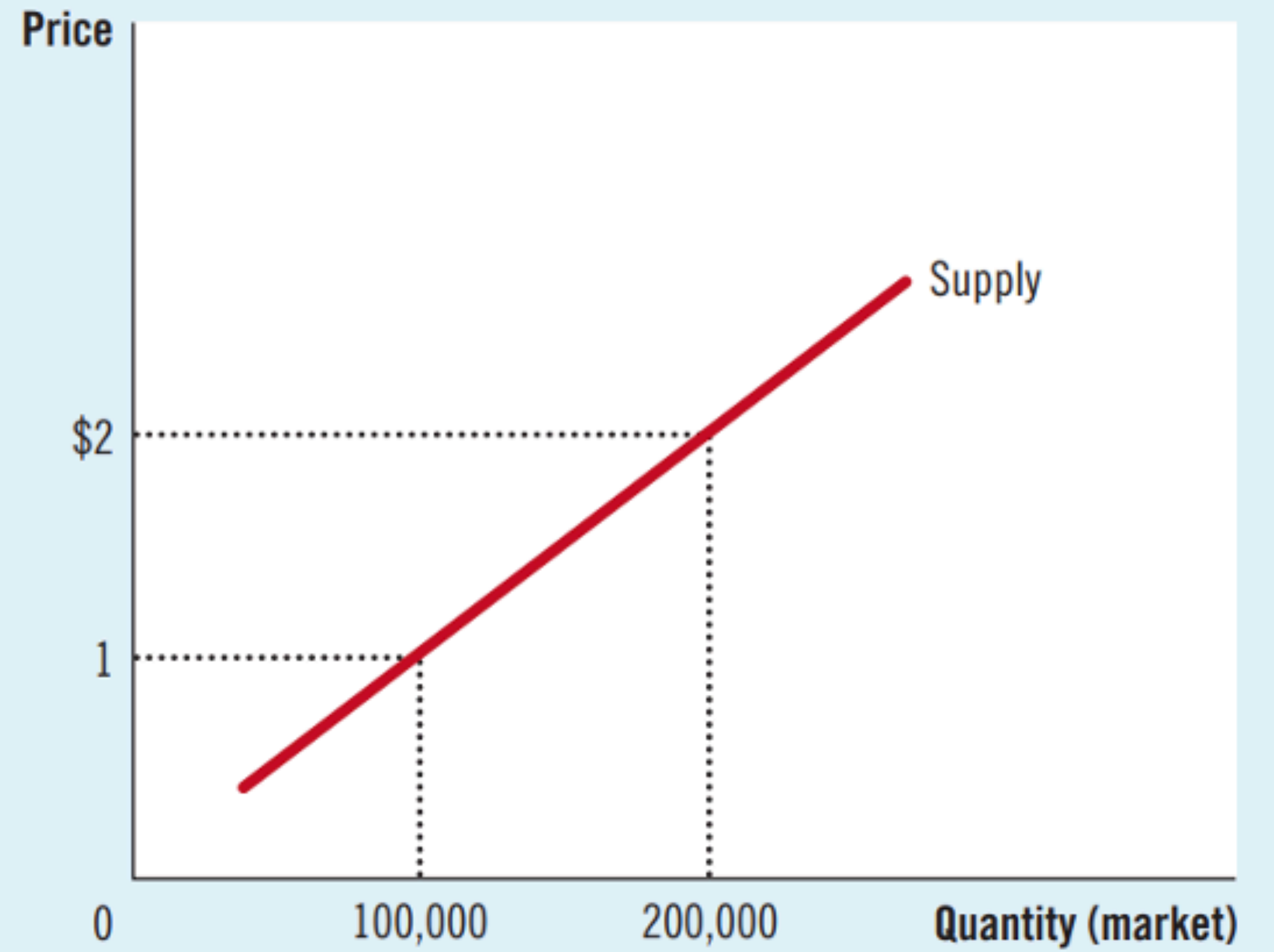
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Short-Run Supply with 1,000 Identical Firms

(a) Individual Firm Supply

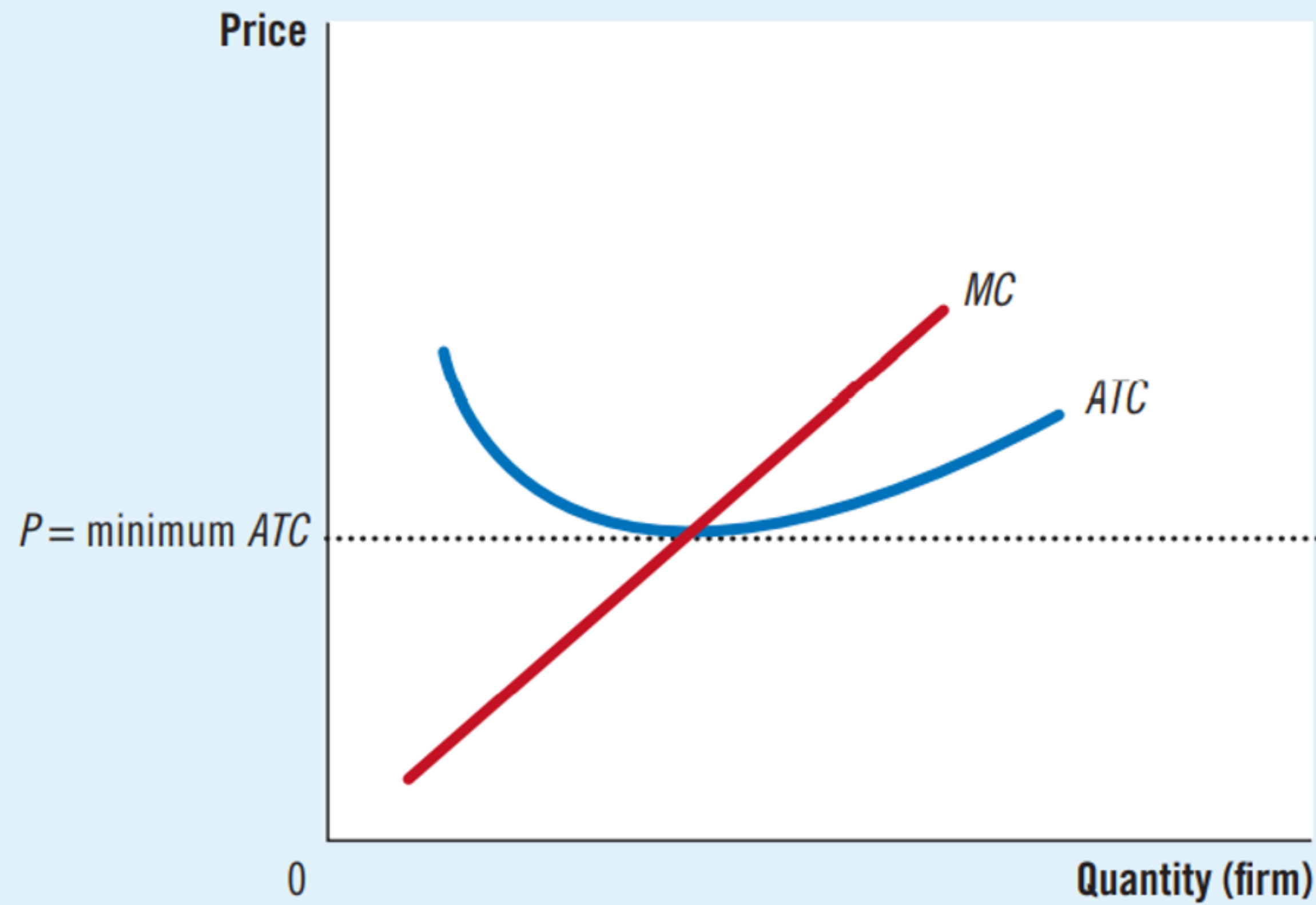


(b) Market Supply

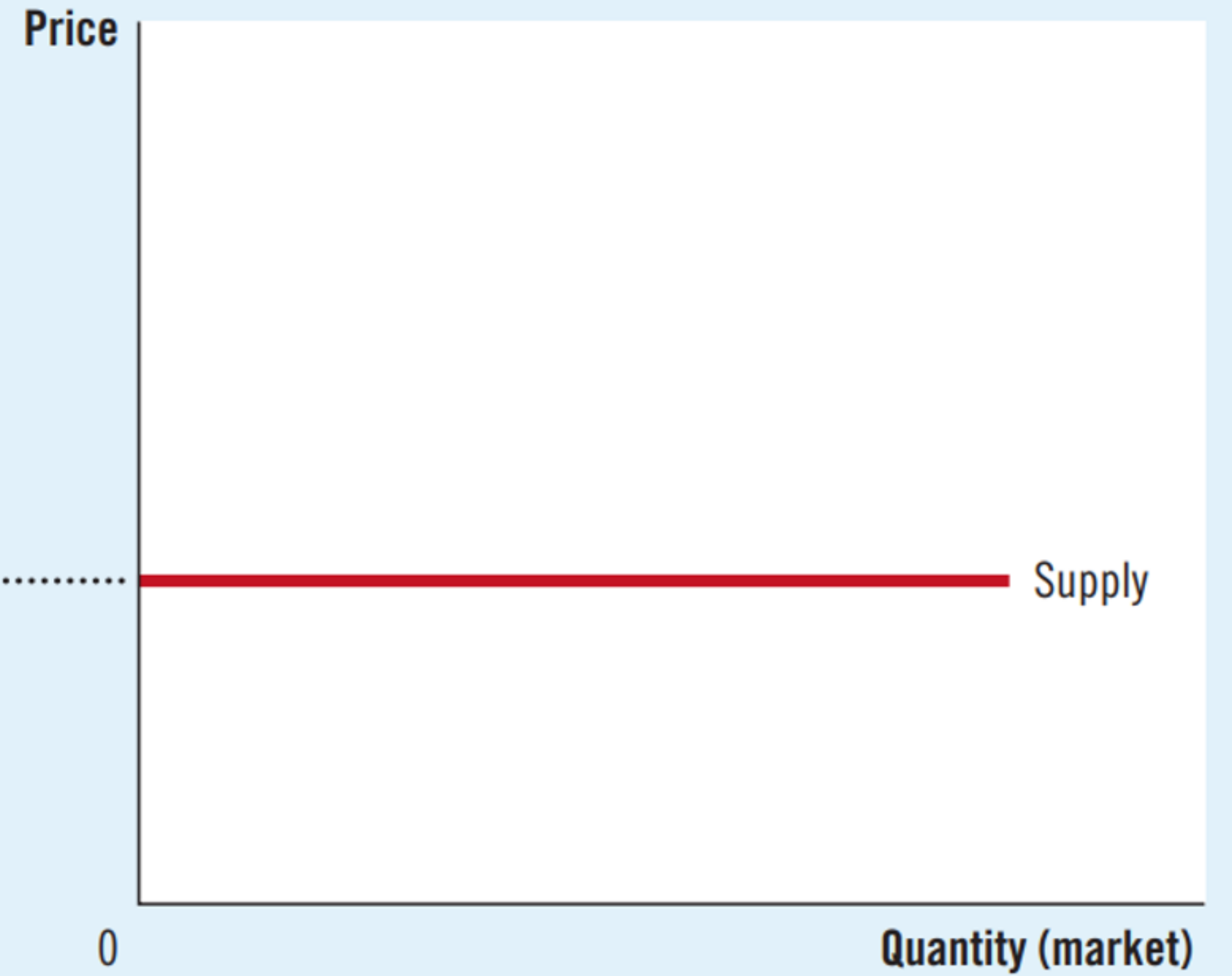


Long-Run Market Supply

(a) Firm's Zero-Profit Condition



(b) Market Supply



Zero Economic Profit

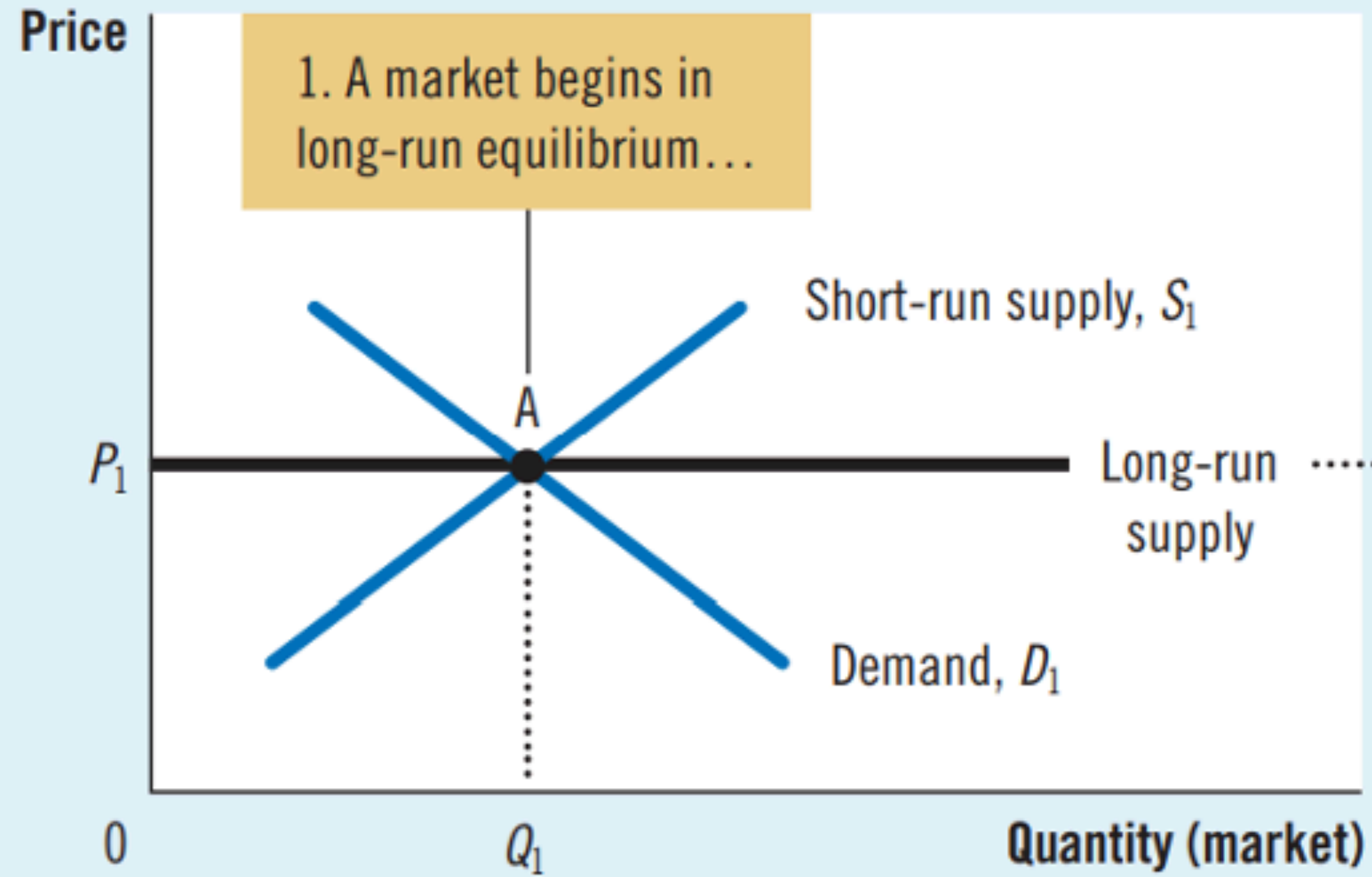
- Why do competitive firms stay in business if they make **zero profit**?
- Profit = Total Revenue – Total Costs
 - Total costs include **explicit & implicit** costs (i.e., all opportunity costs).
- At the zero-profit equilibrium:
 - **Economic Profit is Zero** (because **P = minimum ATC**)
 - **Accounting Profit is Positive**

Ex: Increase in Demand

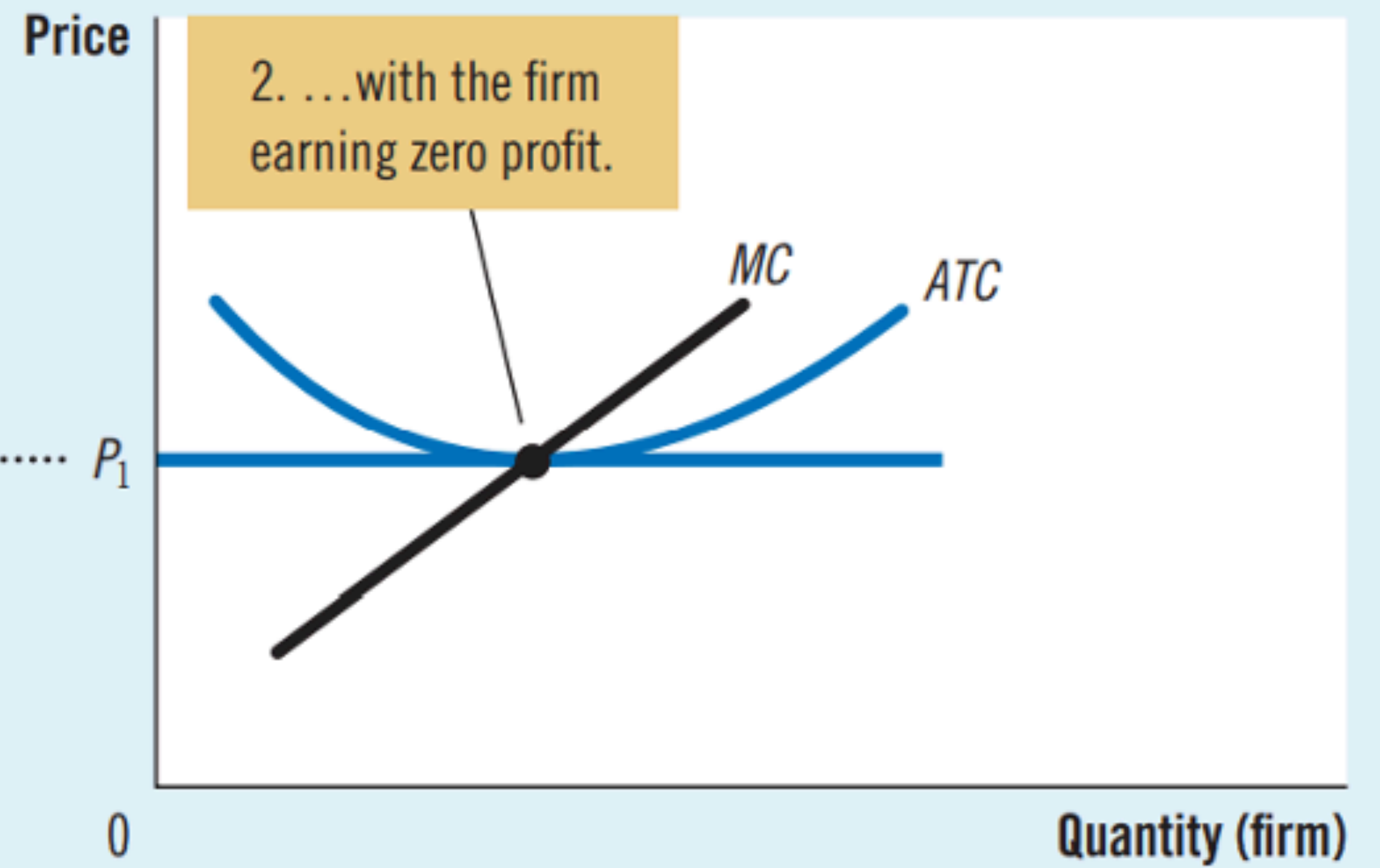
- Suppose a market starts off in the long-run competitive equilibrium. What happens in the market's current state?
- Initial Condition
 - Firms make zero economic profit.
 - **P = minimum ATC**

(a) Initial Condition

Market



Firm

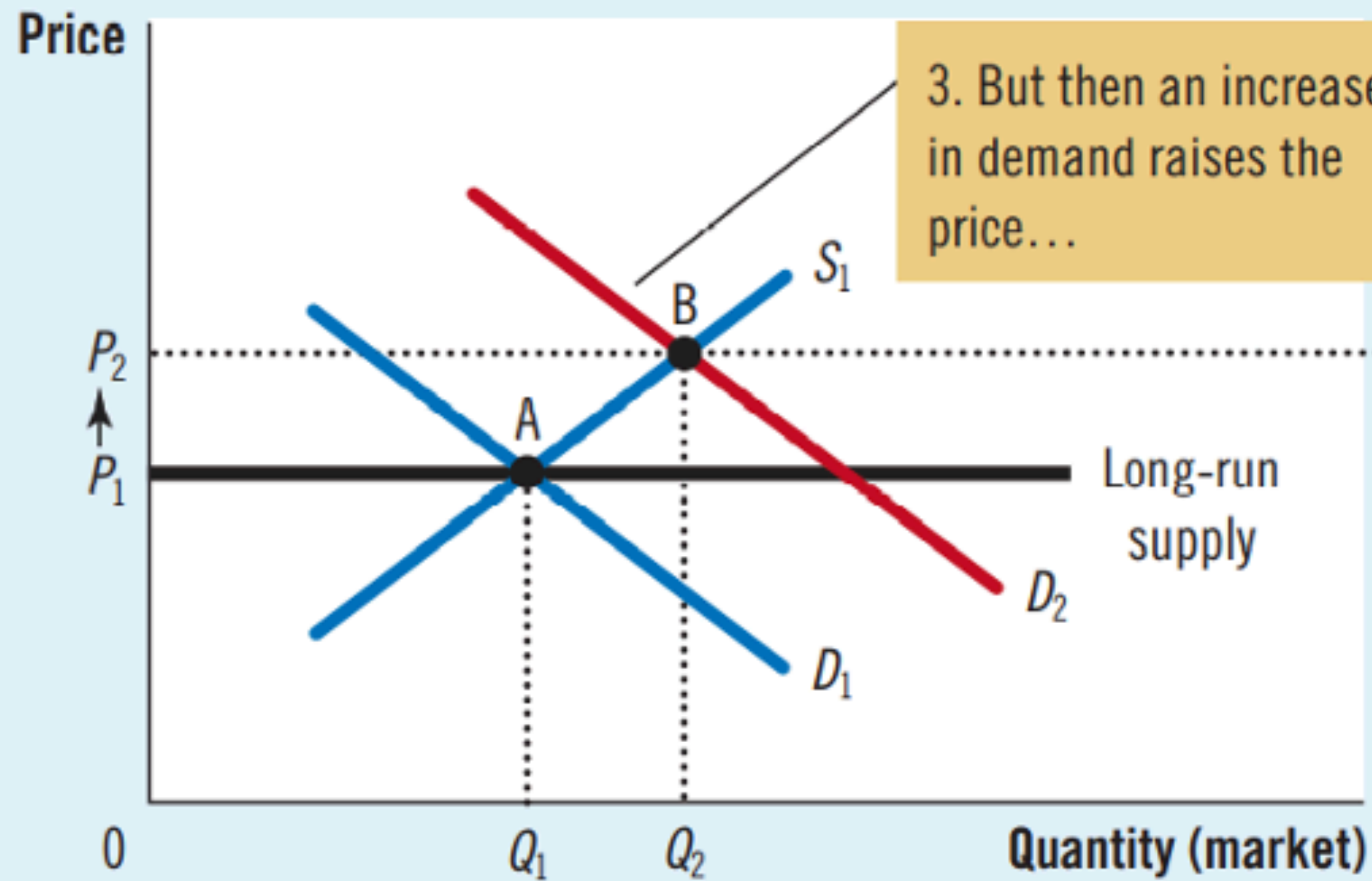


Ex: Increase in Demand

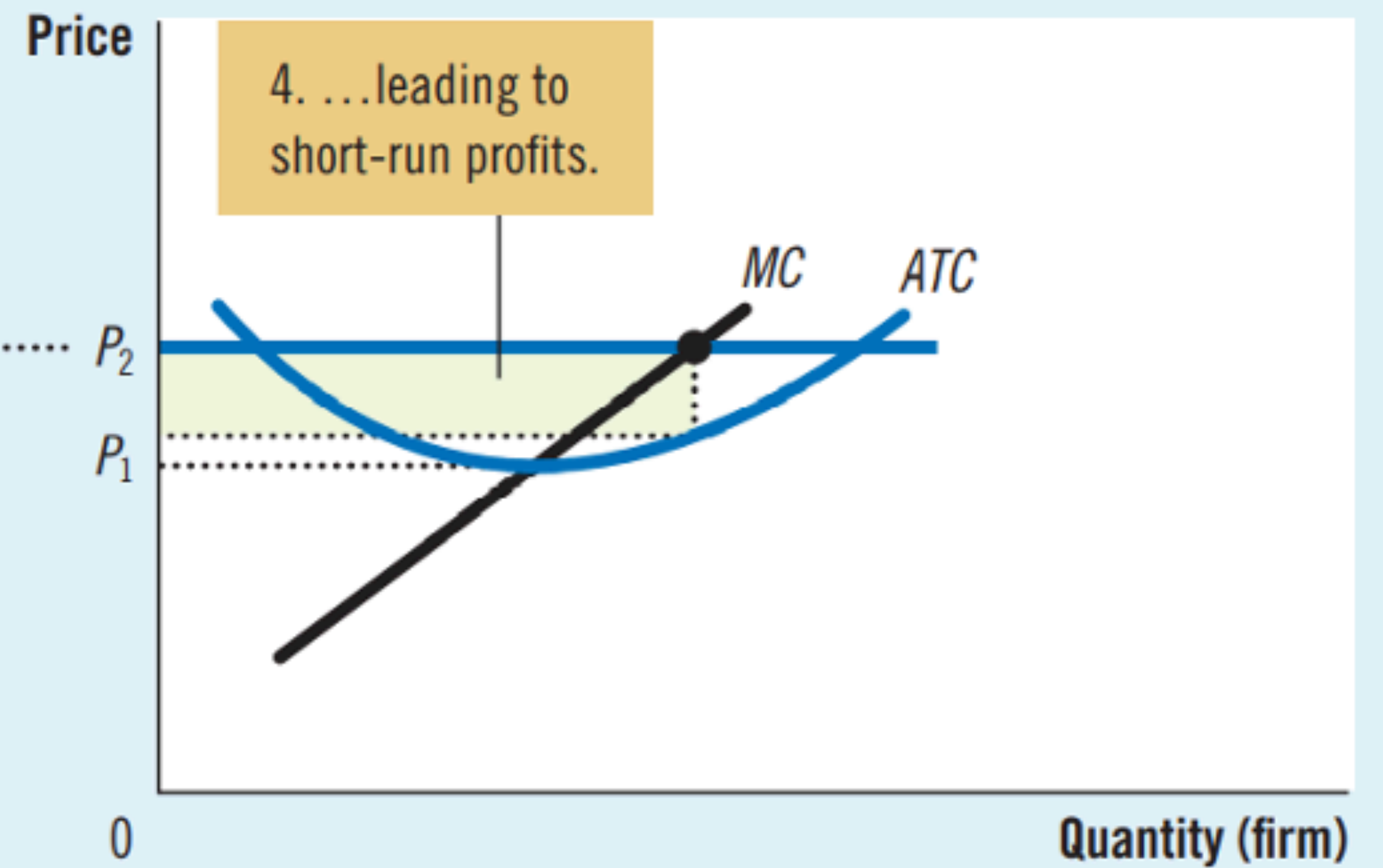
- Now, suppose there is an increase in demand. What happens to the market in the short-run?
- Short-Run Response
 - Demand increases, shifting outward to the right...
 - ...causing both Price & Quantity to increase...
 - ...leading to $P > ATC$...
 - ...resulting in positive economic profits in the short-run.

(b) Short-Run Response

Market



Firm



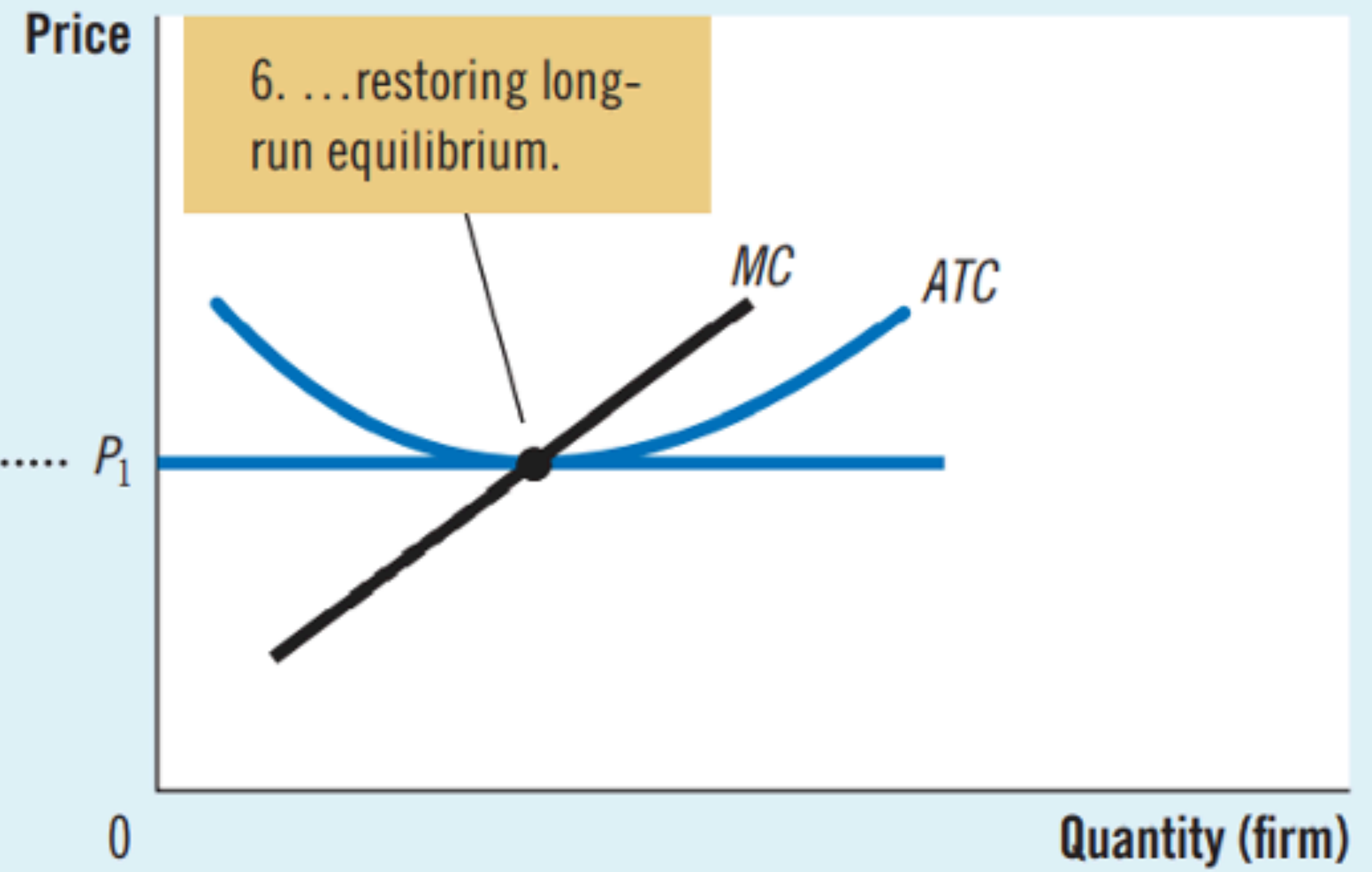
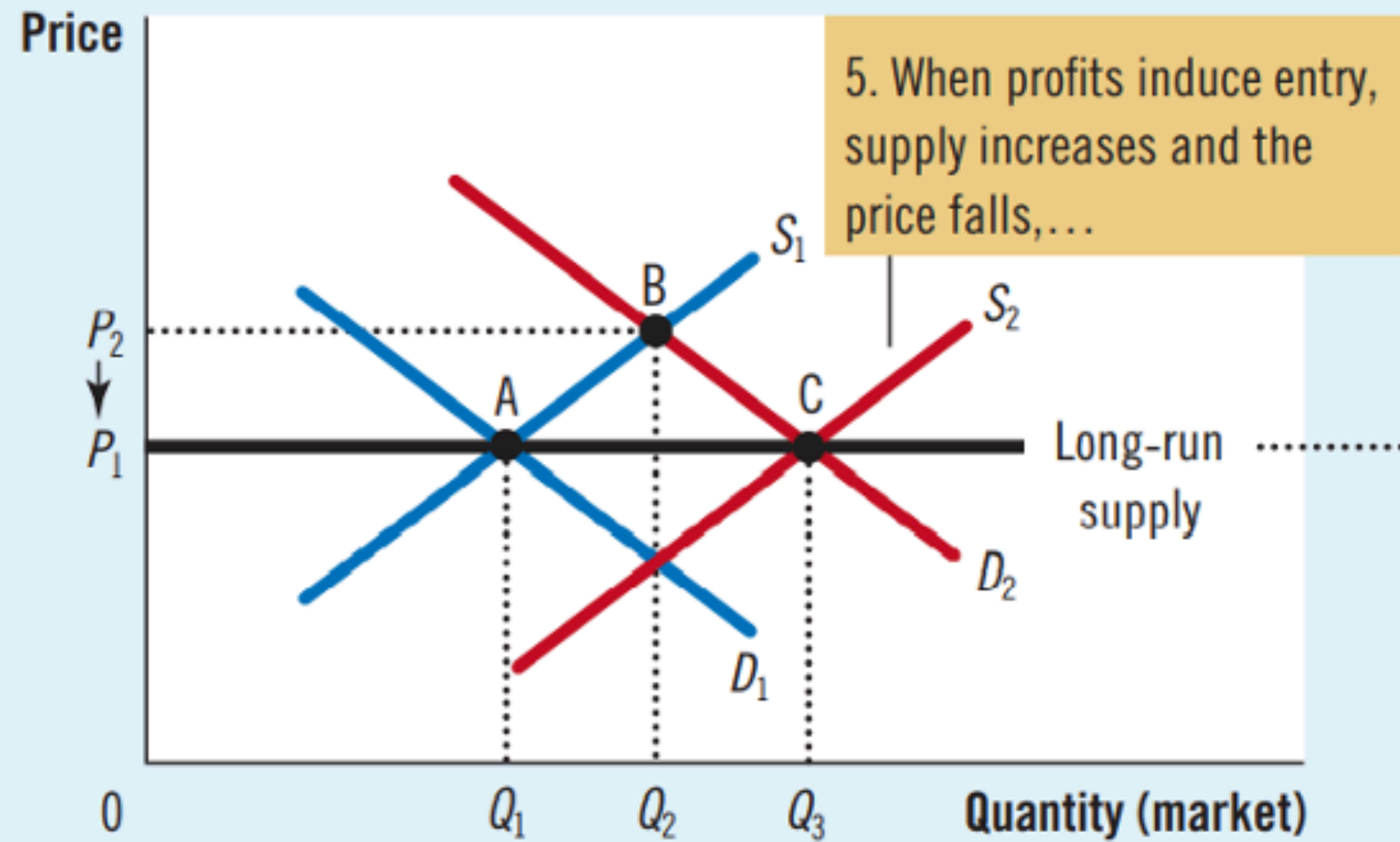
Ex: Increase in Demand

- What happens in the long-run?
- Long-Run Response
 - The allure of **profits** induce firms to **enter** the industry...
 - ...causing **supply to increase**, shifting to the right...
 - ...which causes ***Quantity to increase & Price to fall***...
 - ...**competing economic profit away**, back down to zero...
 - ...restoring the market to the **long-run equilibrium** condition.

(c) Long-Run Response

Market

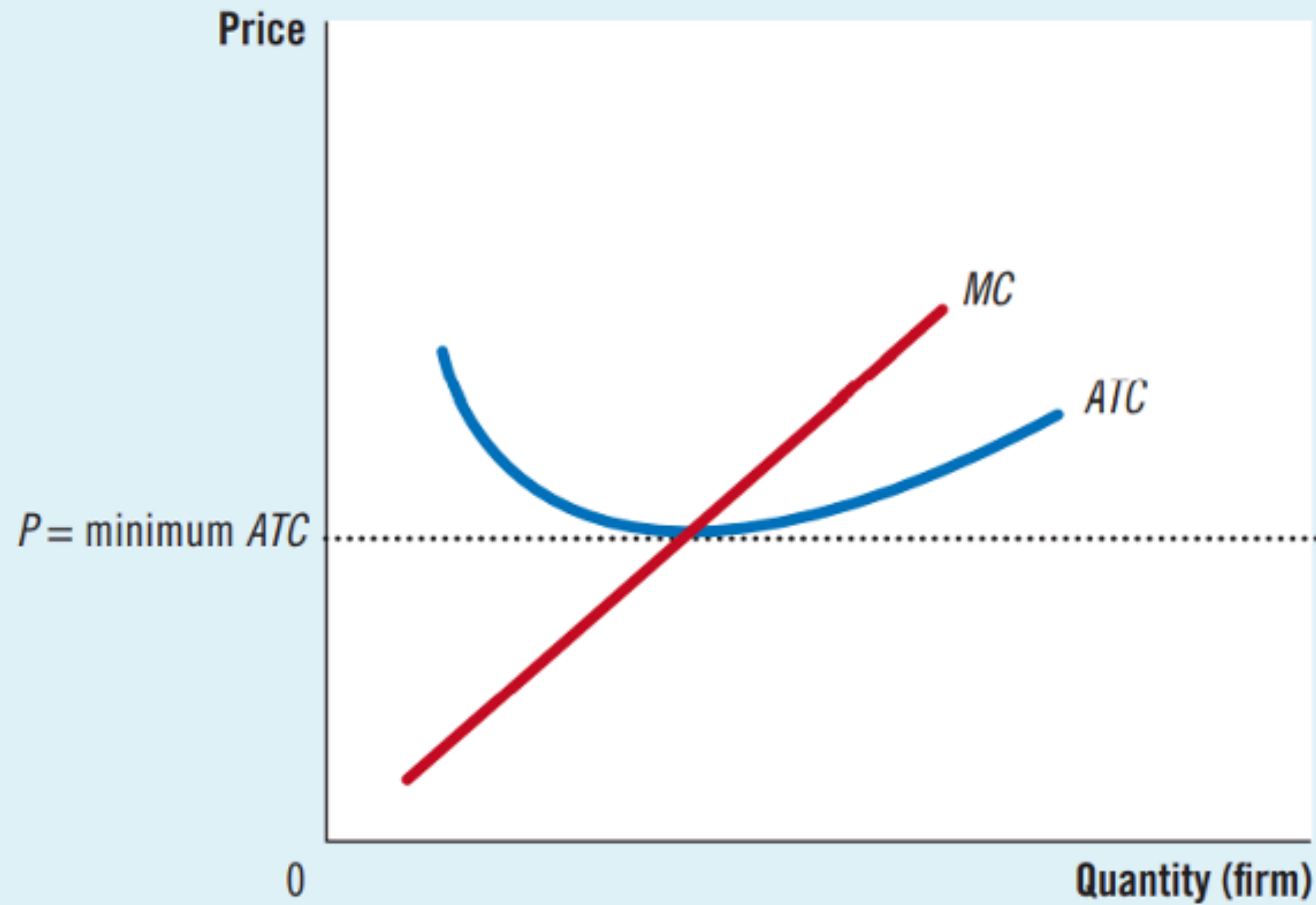
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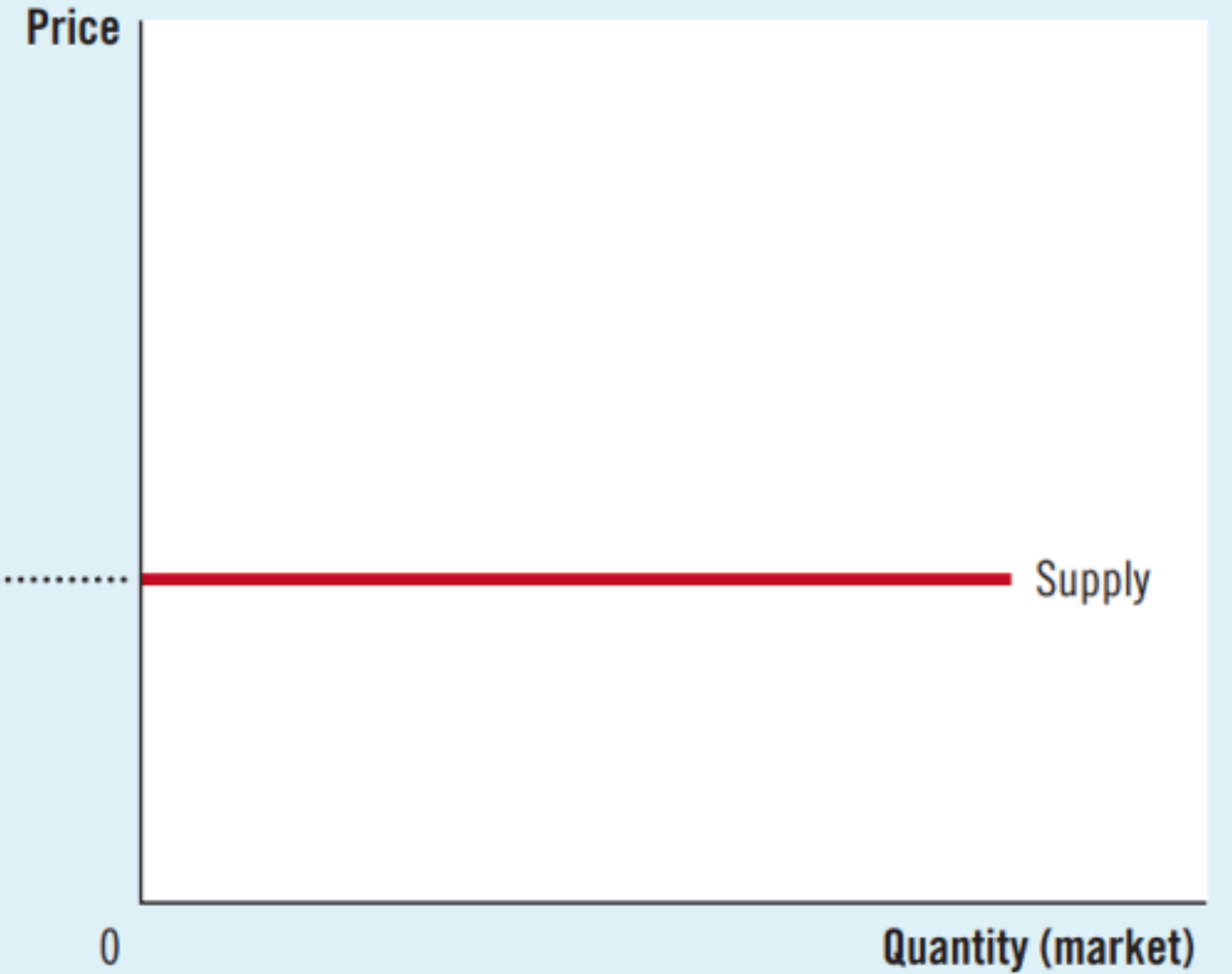
Brief tangent

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(a) Firm's Zero-Profit Condition

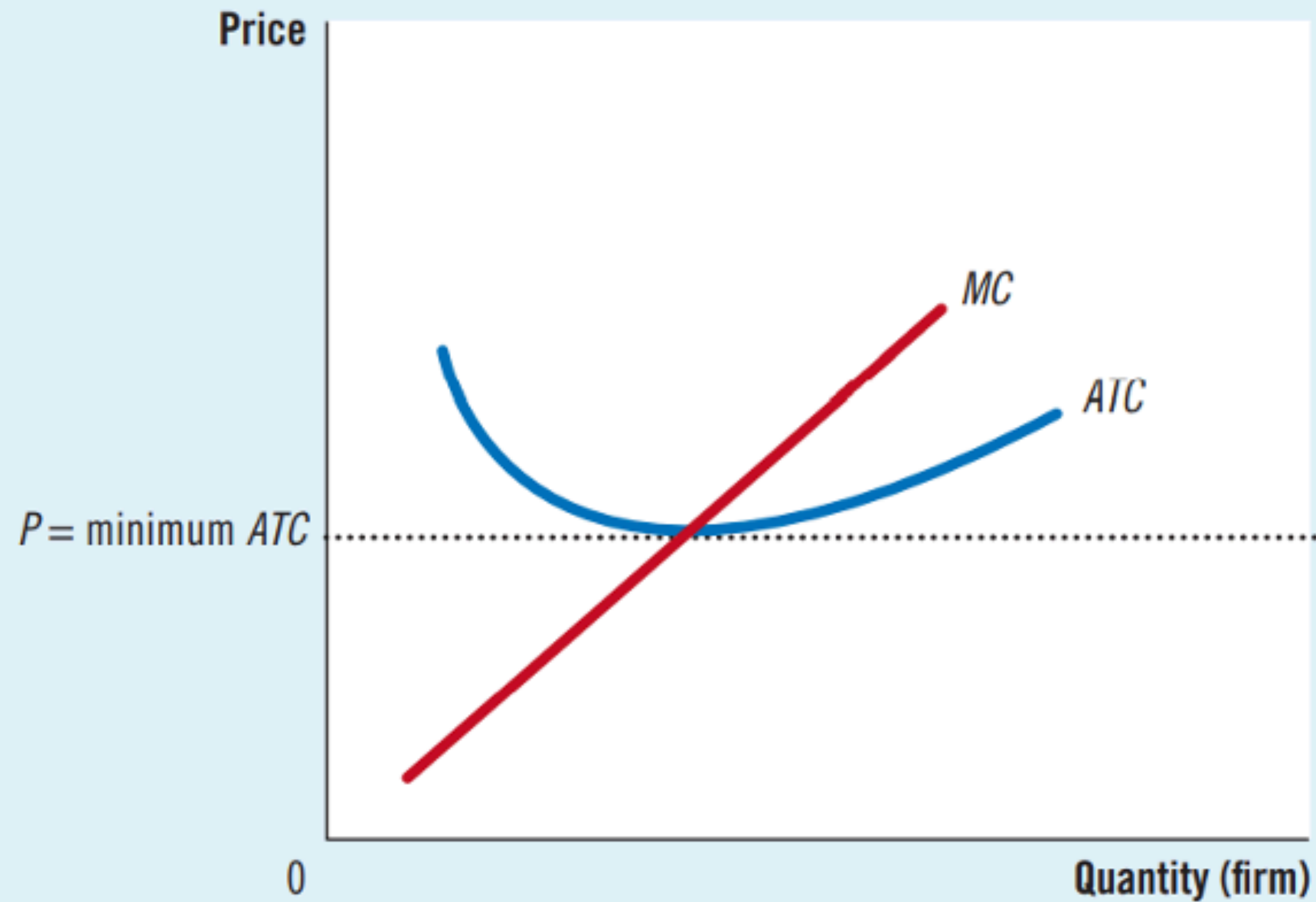


(b) Market Supply

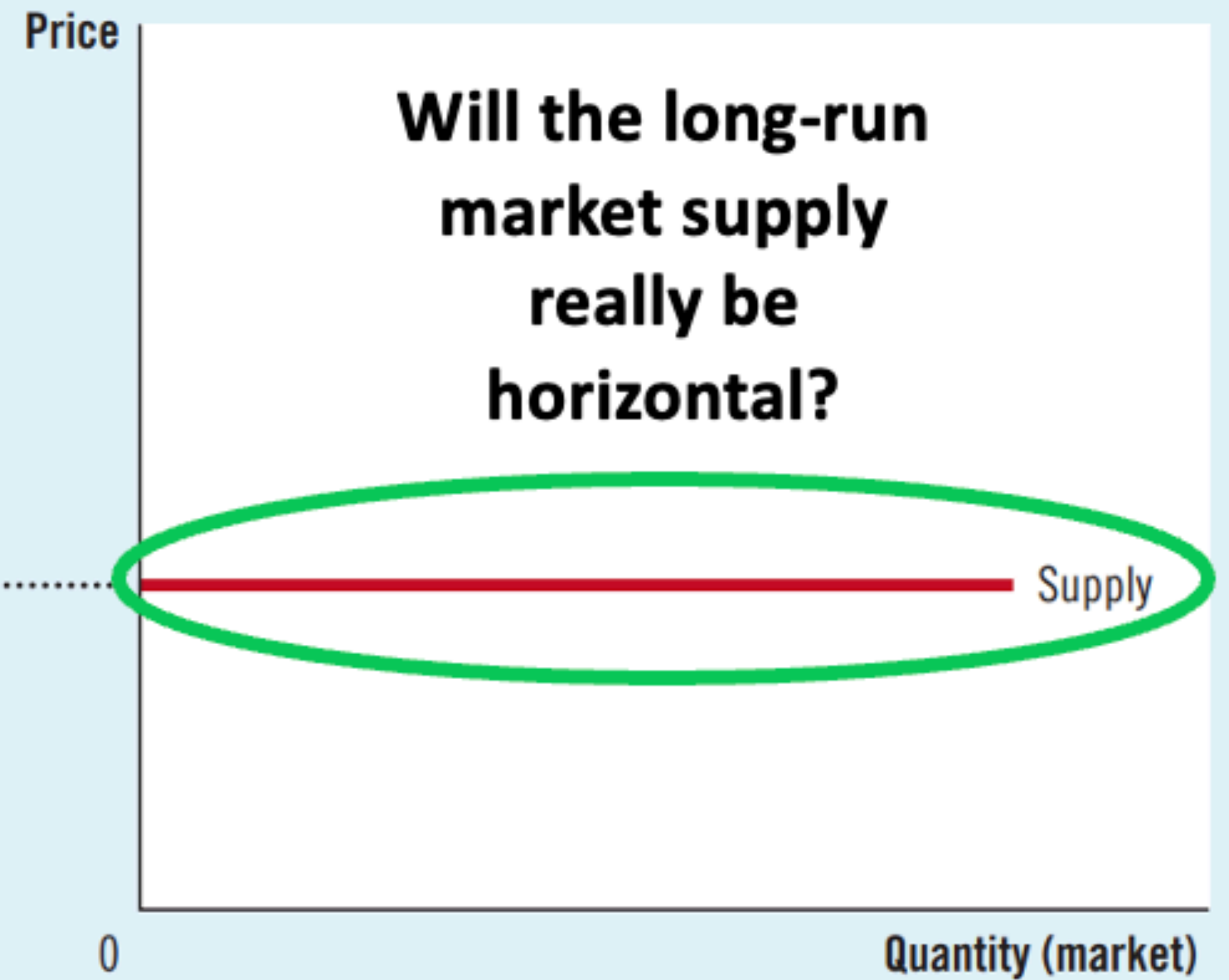


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(b) Market Supply

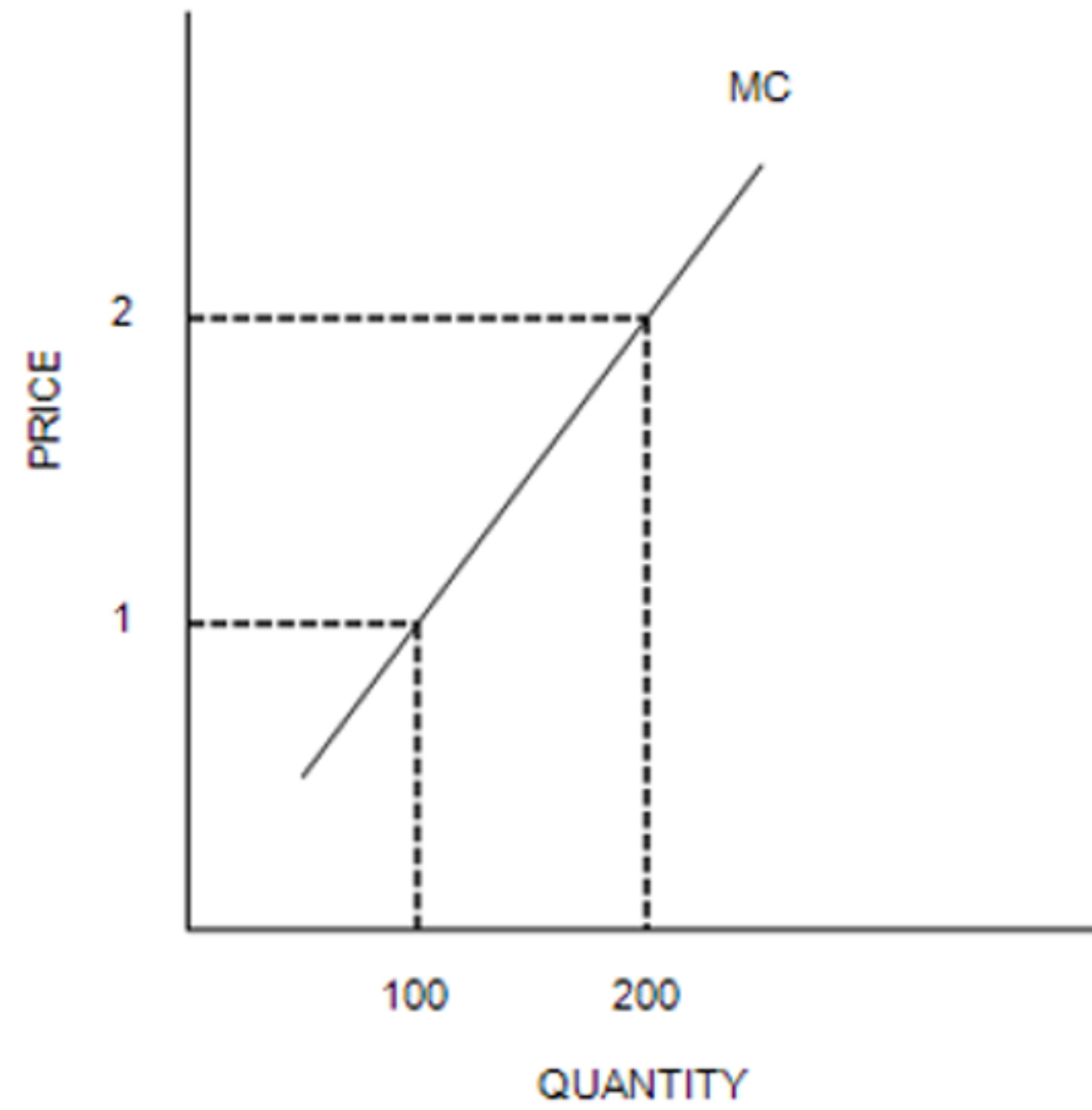


Supply Slopes Up

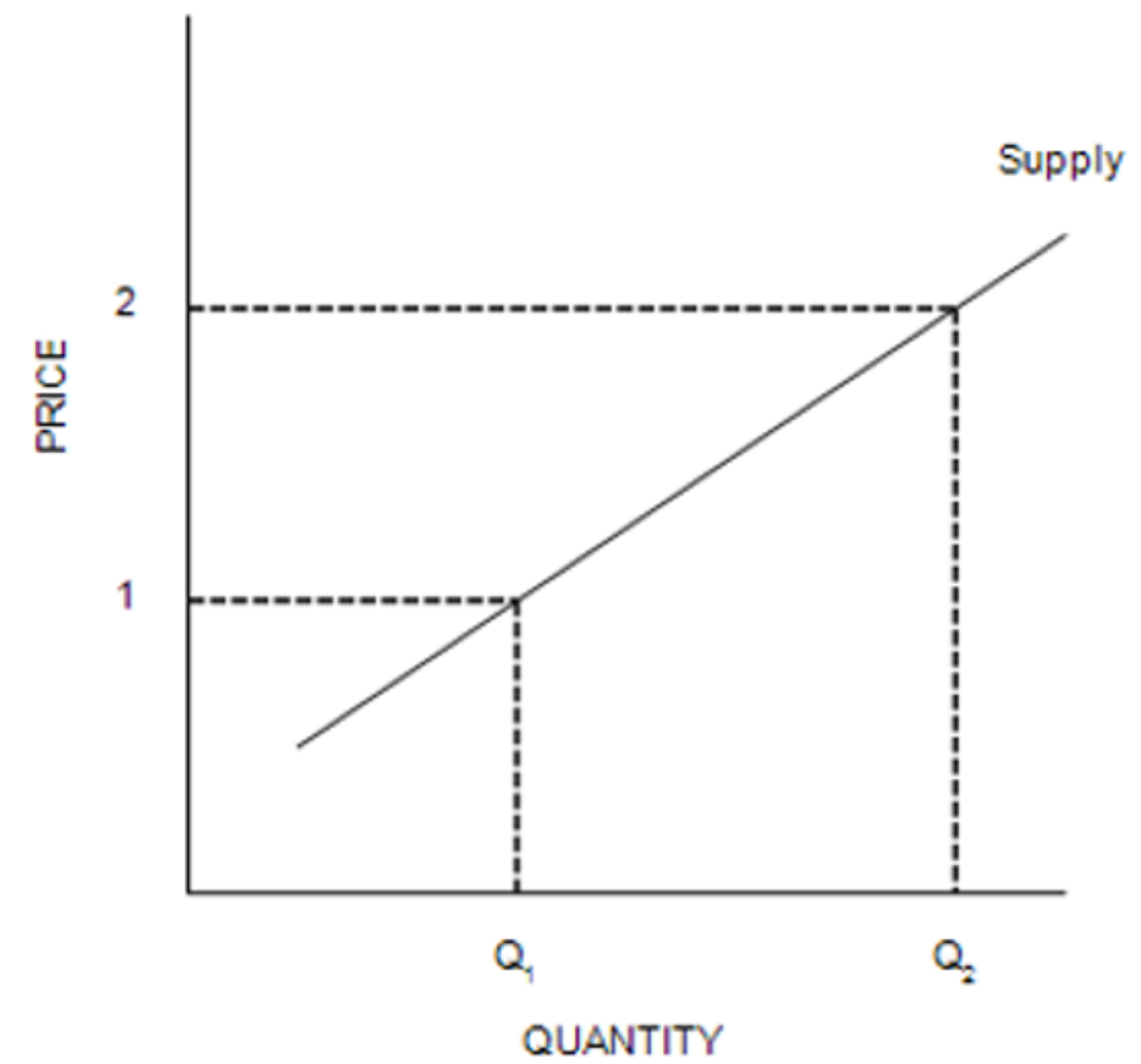
- Long-Run Market Supply for firms *may slope up* for two reasons:
- **Scarcity**
 - Inputs for production are scarce, which is costly.
 - Profit is alluring but it's costly to supply goods to the market, even with free entry.
- **Not all costs are equal!**
 - Different firms face different costs even with free entry.

Practice!

Graph (a): Firm



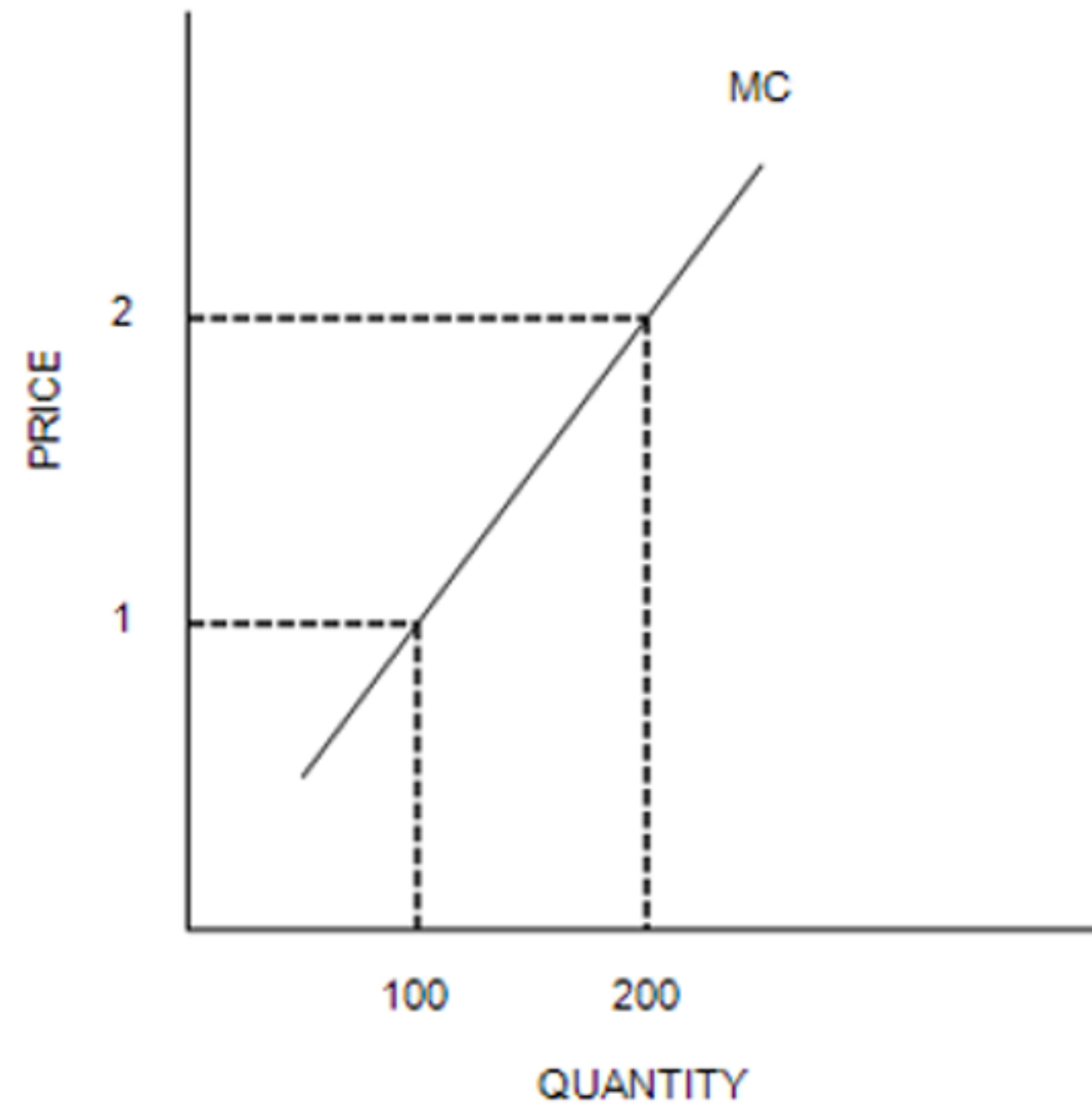
Graph (b): Market



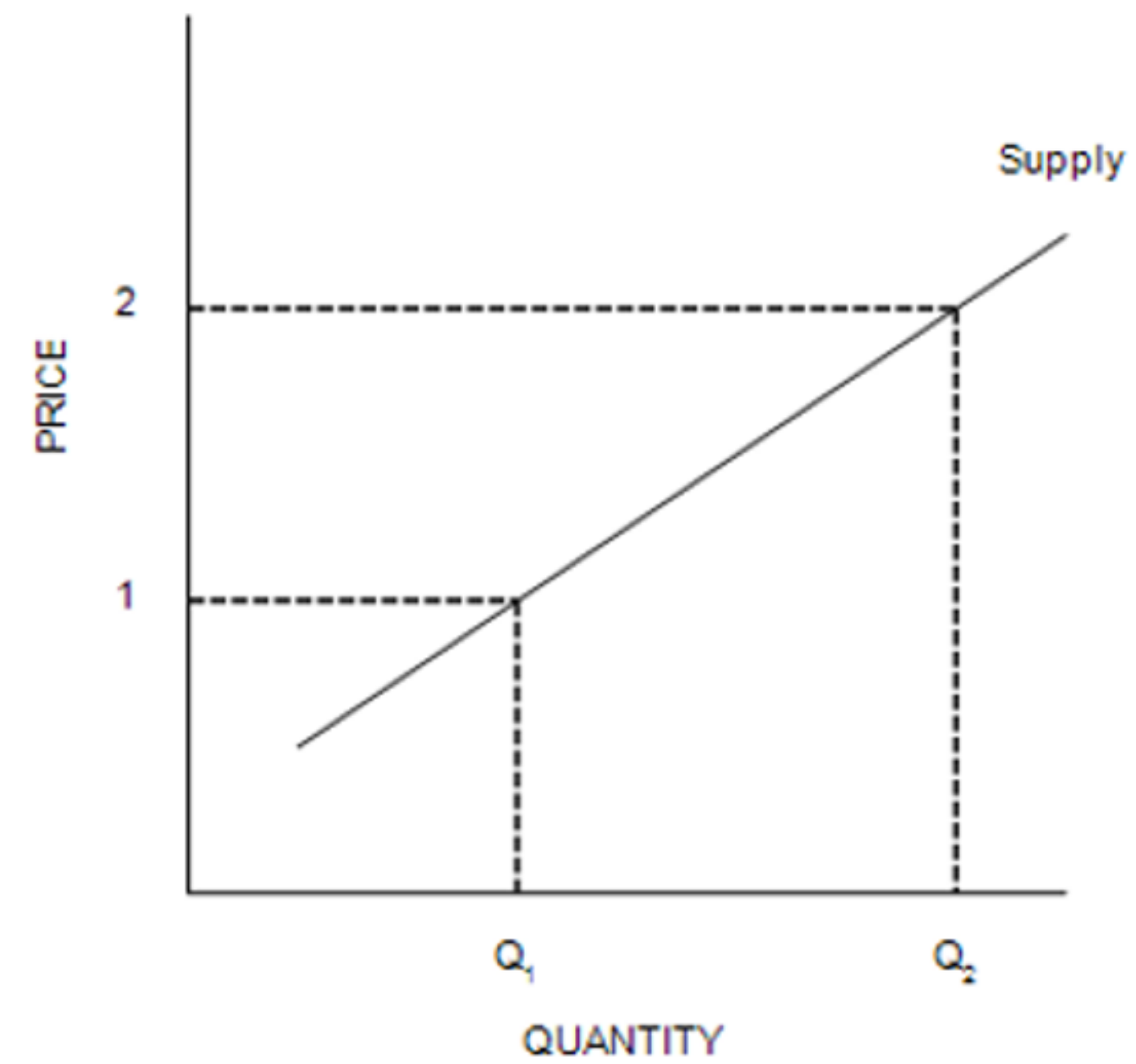
If there are 300 identical firms in this market, what level of output will be supplied to the market when price is \$1.00?

- a. 300
- b. 6,000
- c. 30,000
- d. 60,000

Graph (a): Firm



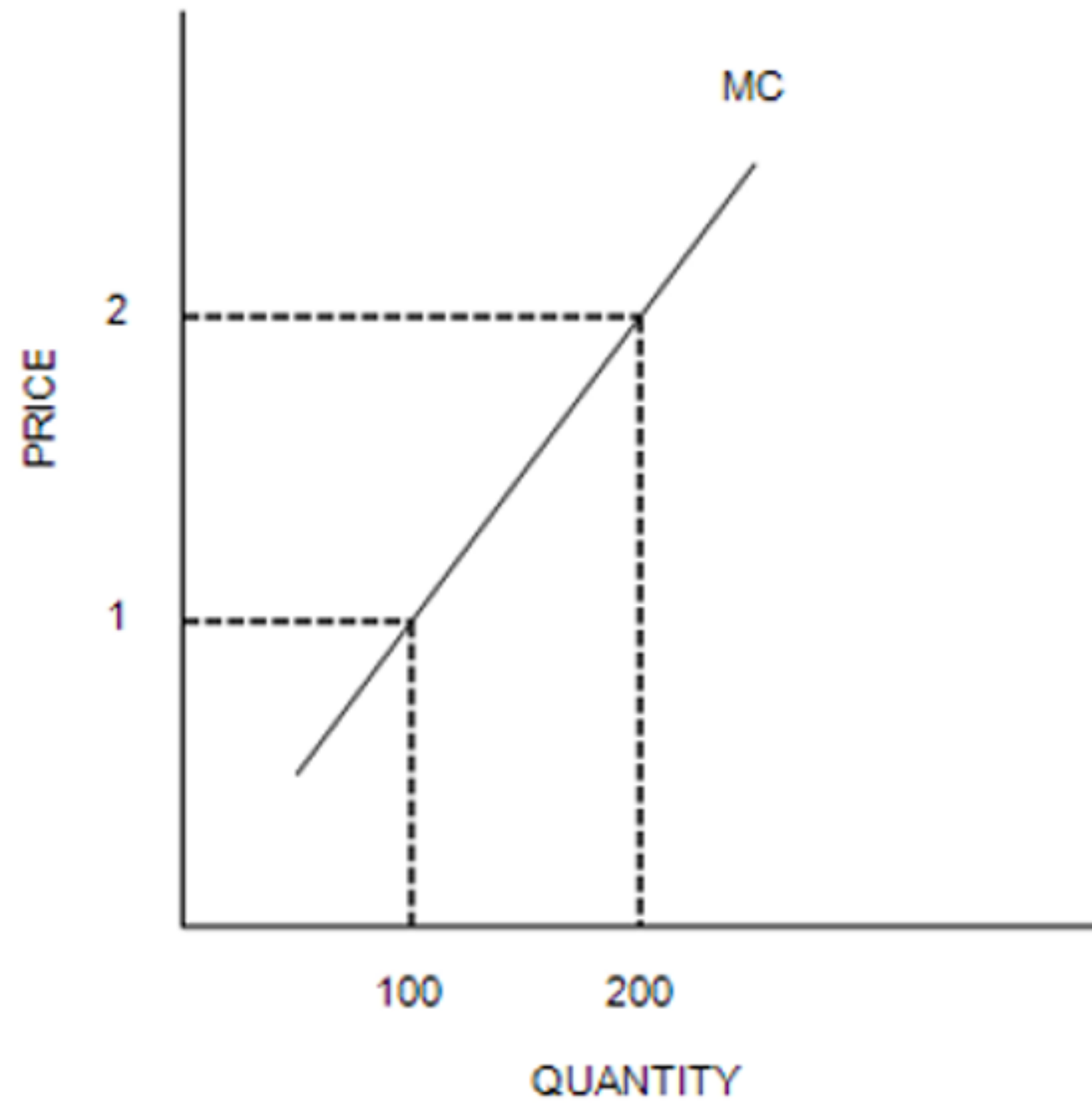
Graph (b): Market



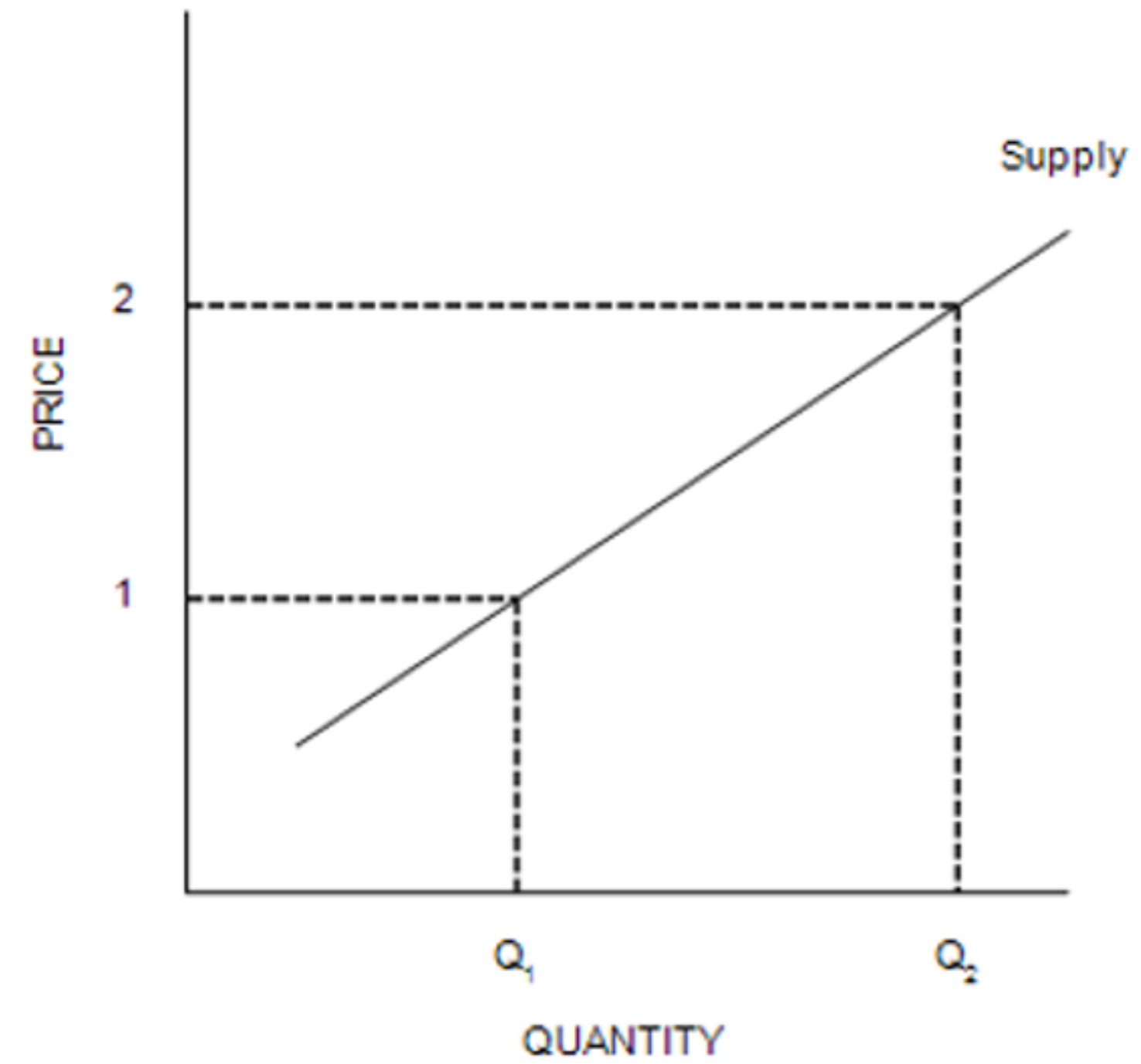
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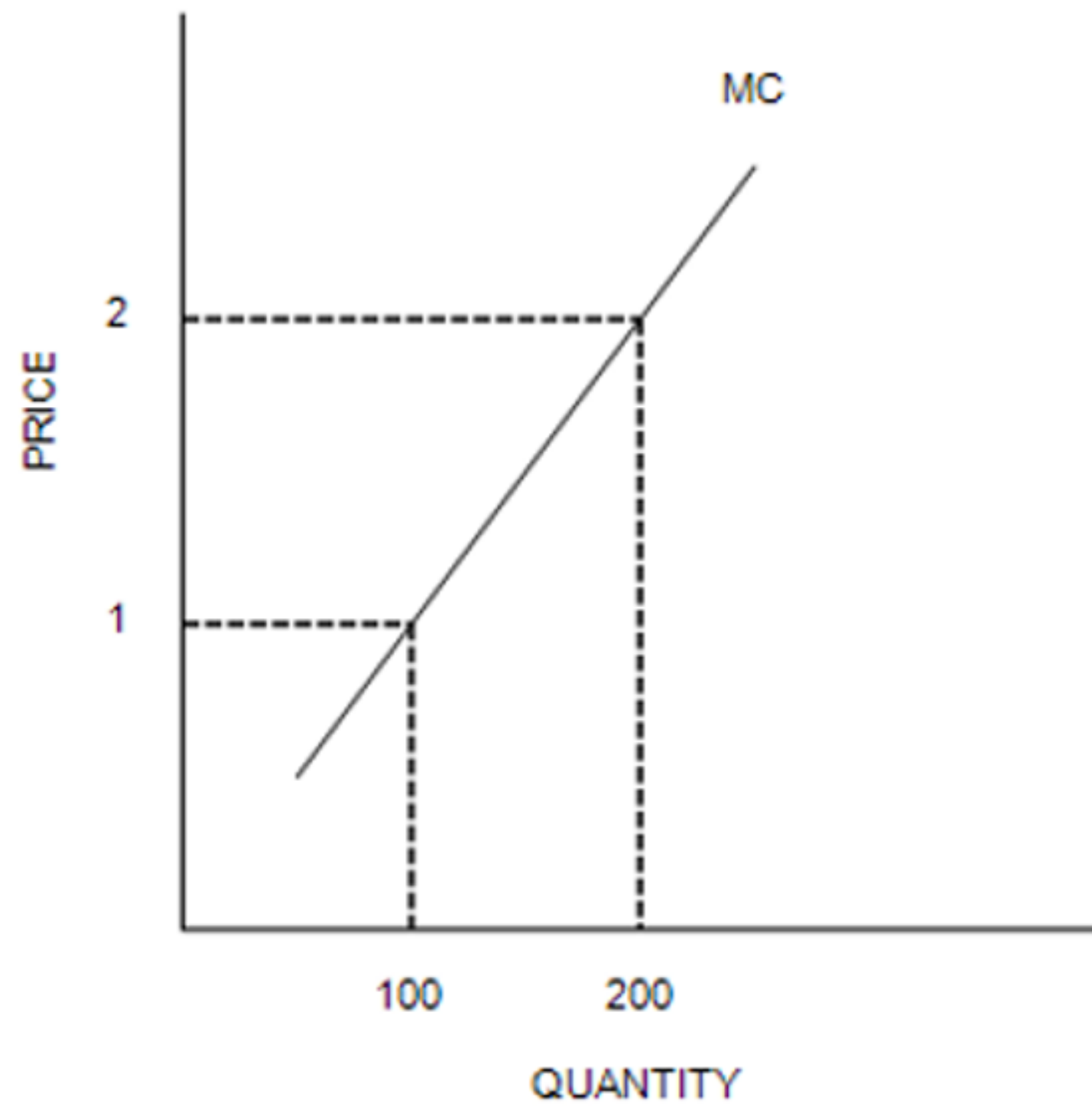
Graph (b): Market



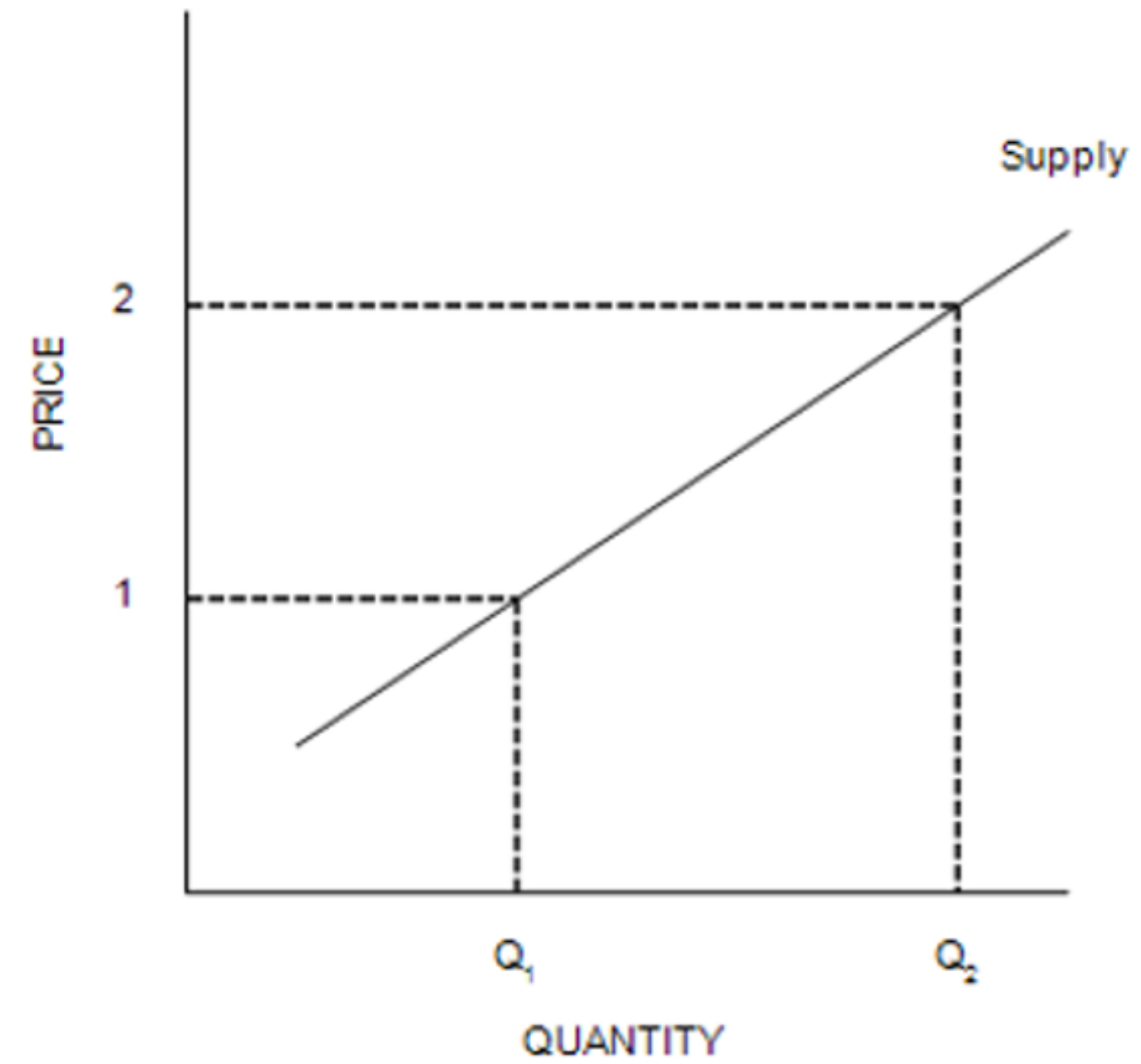
If there are 100 identical firms in this market, what is the value of Q_2 ?

- a. 10,000
- b. 20,000
- c. 40,000
- d. 80,000

Graph (a): Firm



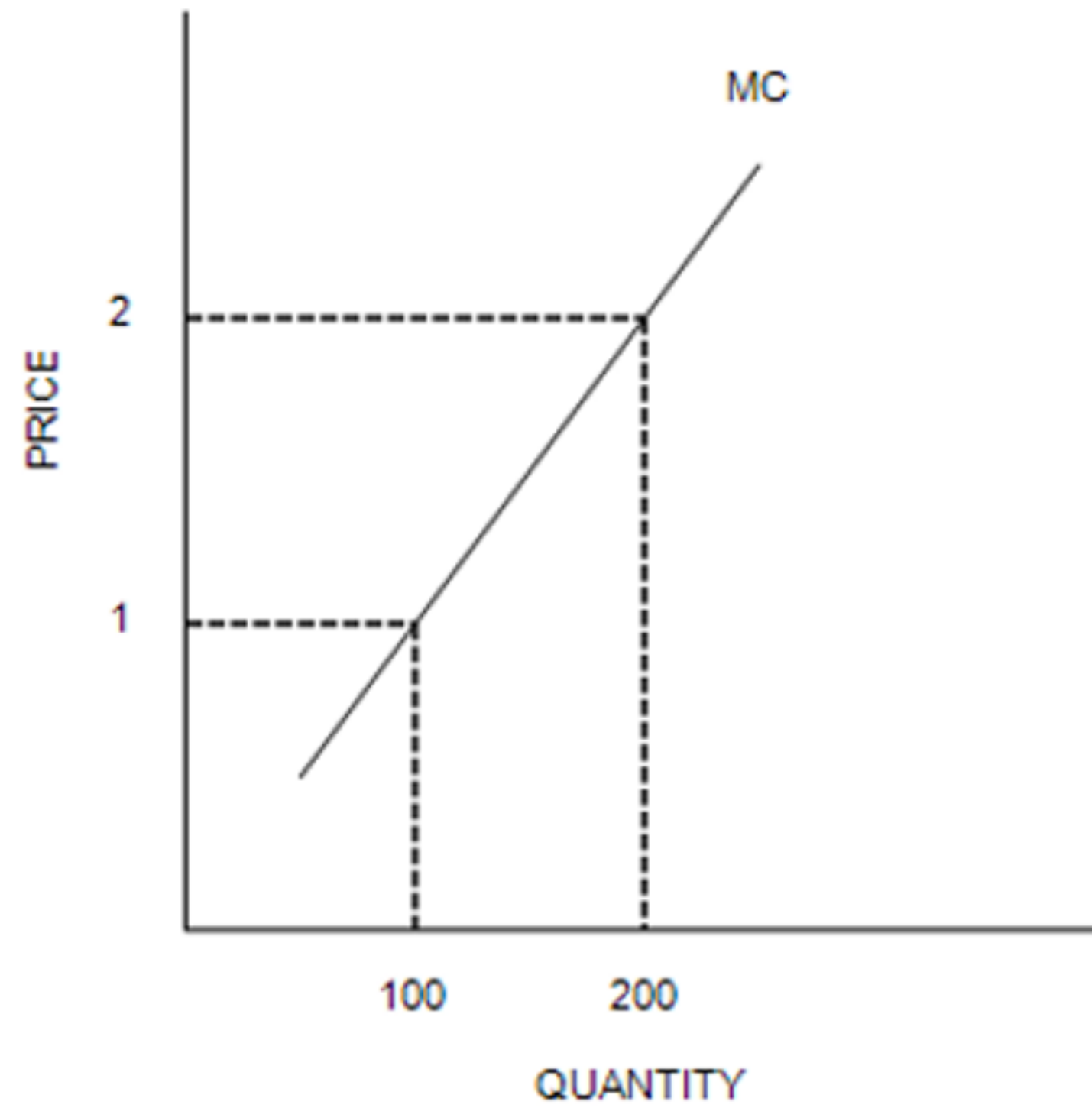
Graph (b): Market



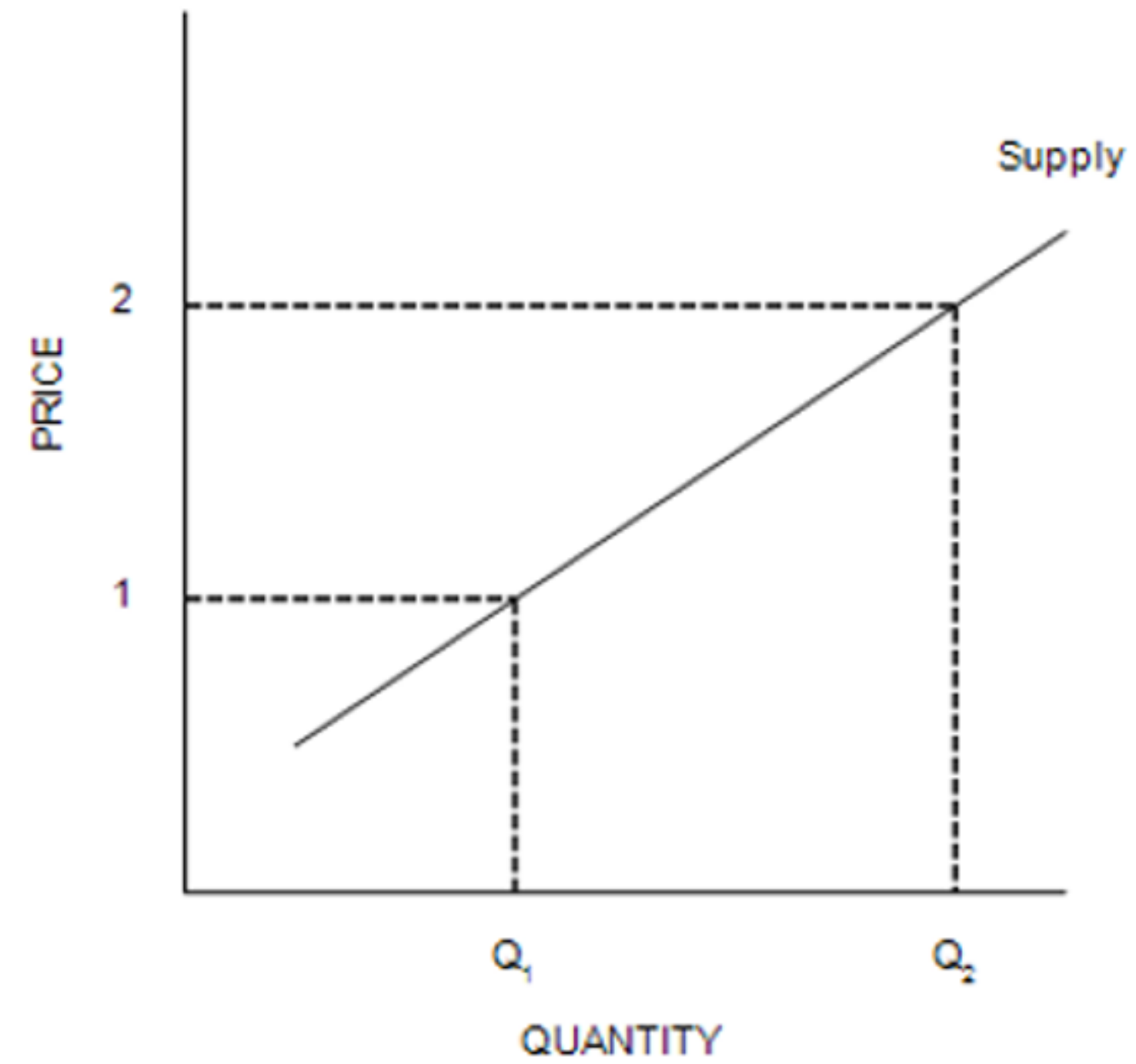
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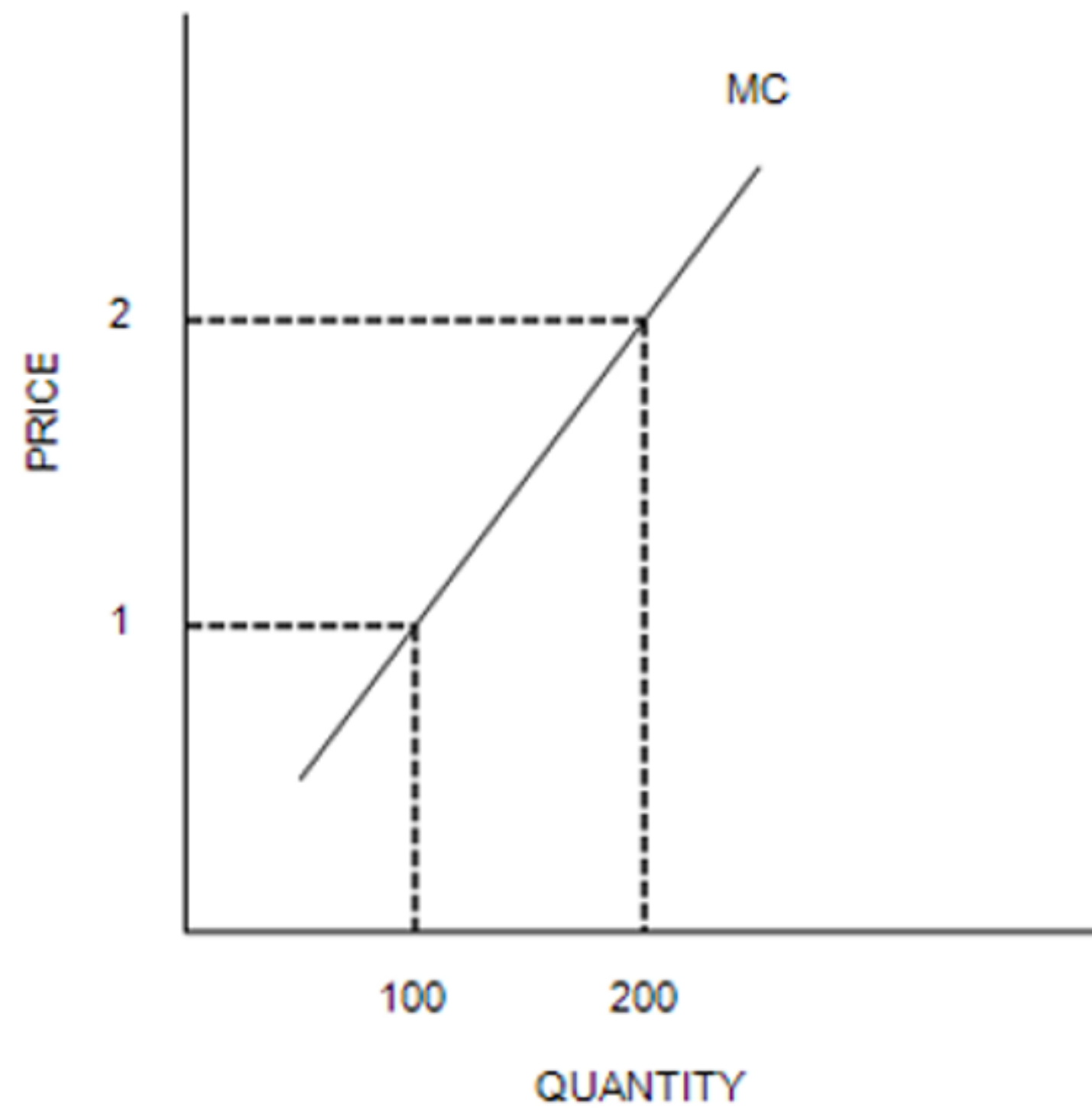
Graph (b): Market



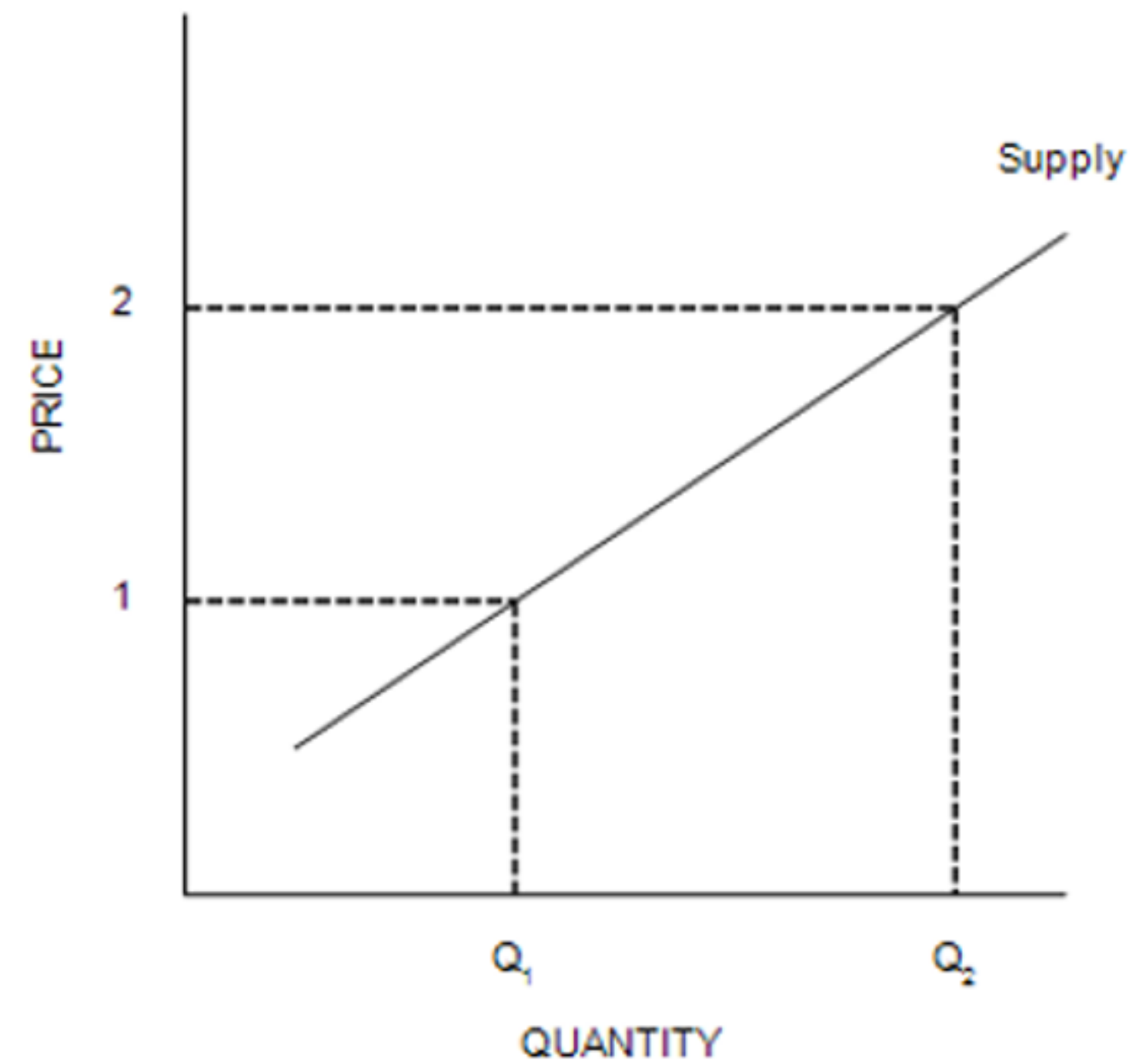
When 100 identical firms participate in this market, at what price will 15,000 units be supplied to this market?

- a. \$1.00
- b. \$1.50
- c. \$2.00
- d. The price cannot be determined from the information provided.

Graph (a): Firm




Graph (b): Market




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If there is an increase in market demand in a perfectly competitive market, then in the short run

- a. there will be no change in the demand curves faced by individual firms in the market.
- b. the demand curves facing firms will shift downward.
- c. the demand curves facing firms will become more elastic.
- d. profits will rise.



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The long-run market supply curve in a competitive market will

- a. always be horizontal.
- b. be the portion of the MC that lies above the minimum of AVC for the marginal firm.
- c. typically, be more elastic than the short-run supply curve.
- d. be above the competitive firm's efficient scale.



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Firms & the Market

- Most everything that we consume is produced by a firm.
- For every firm producing a good, there are other firms that are (or could be) producing substitutes.
- Firms ***compete against one another*** to supply goods.
- In doing so, economists assume that firms aim to ***maximize profits***.

Firms & the Market

- Profit-maximizing firms will behave differently depending on the extent of competition...
- ...some markets may have many competing firms...
- ...some markets may have only one firm producing a good...
- ...and there's a multitude of scenarios in between.

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**End of class.
Thanks for your attention!**