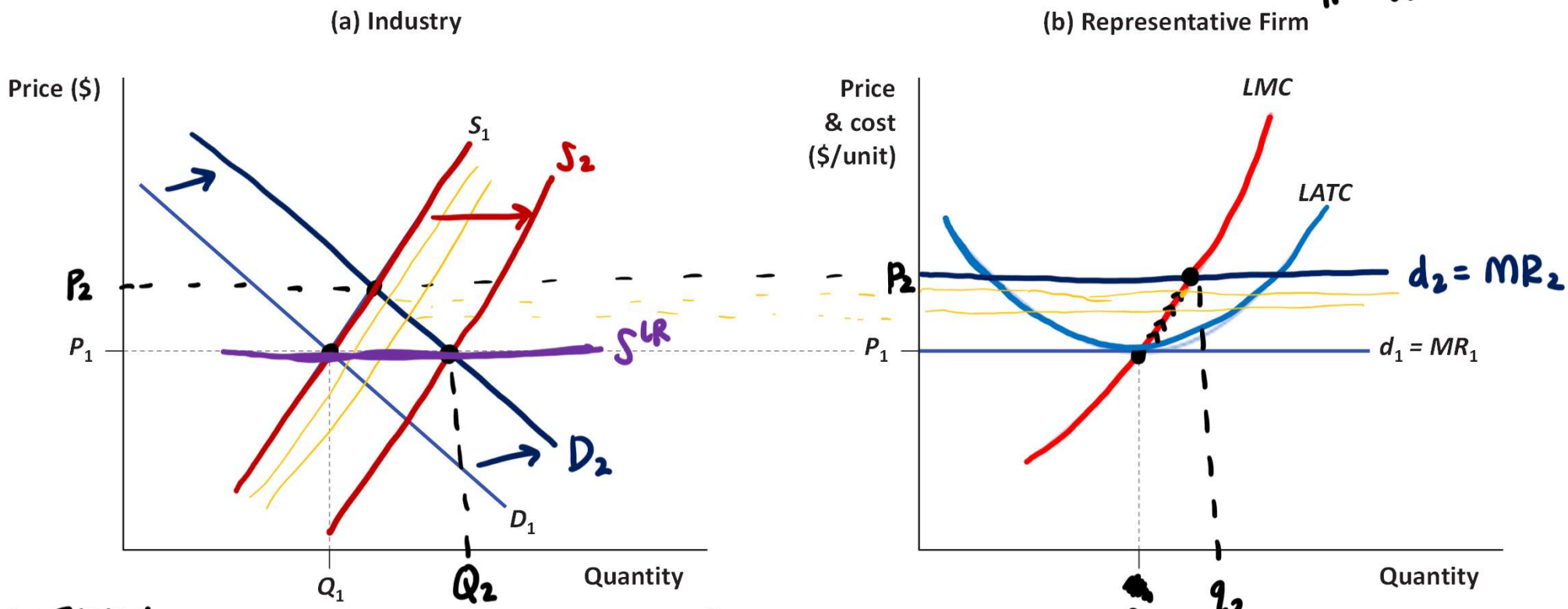
Unit 2
Supply in a Competitive Market (Ch. 8)
10/21

ECON 323 – MICROECONOMIC THEORY – DR. STRICKLAND

Deriving the long-run equilibrium

$\pi = (P - ATC) \cdot Q$



⓪ INITIALLY IN LR EQUIL: $P_1 = LATC$ ($\pi = 0$)

① ↑D to D_2 => ↑P to P_2

② ↑P to P_2 => ↑d to d_2 => ↑q to q_2

($\pi > 0$ IN SR BIC $P_2 > ATC$)

③ $\pi > 0$ => FIRMS ENTER IN LR => ↑S UNTIL $\pi = 0$ ($P = LATC$)

*LR EQUIL PRICE = MIN LATC

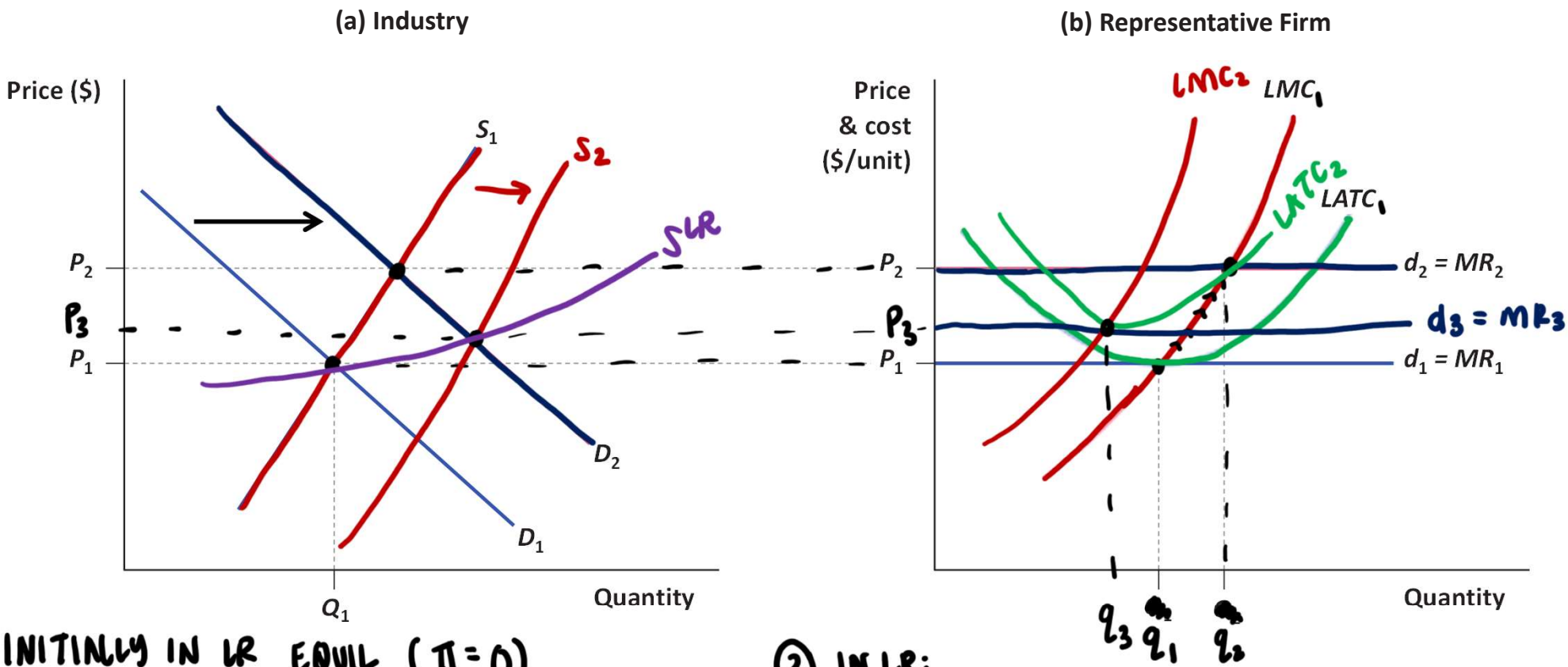
Long-run supply when costs are not constant

Previous example reflects a **constant-cost industry**

Some industries may be:

- **Increasing-cost**: TC ↑ w/ INDUSTRY OUTPUT
  e.g. OIL PRODUCTION
  => LR INDUSTRY SUPPLY UPWARD SLOPING
- **Decreasing-cost**: TC ↓ w/ INDUSTRY OUTPUT
  e.g. ELECTRIC VEHICLES
  => LR INDUSTRY SUPPLY & DOWNWARD SLOPING

Deriving the long-run equilibrium in an increasing-cost industry



⓪ INITIALLY IN LR EQUIL ($\pi = 0$)

① $\uparrow D$ to D_2 => $\uparrow P$ to P_2

② $\uparrow P$ to P_2 => $\uparrow d$ to d_2 => $\uparrow q$ to q_2
(IN SR $\pi > 0$ BIC $P_2 > ATC$)

③ IN LR:
FIRMS ENTER BIC $\pi > 0$ => $\uparrow S$
AND COSTS OF FIRM $\uparrow$
(OCCURS UNTIL ECON $\pi = 0$)

Cost differences in perfect competition

We have also been assuming that all firms have **identical** costs

Some firms may have lower production costs due to:

- Different prices for inputs
- Special knowledge that increases efficiency
- Superior location or access to superior resources

These more efficient producers earn a special type of return called **economic rent** "UNEARNED INCOME/SURPLUS"

- the return to a specialized input above what the firm paid for it

Cost differences in perfect competition

Example: Carport and Sweet Eugene's sell an identical good (coffee)

Suppose Carport's location is a source of **economic rent**

- Carport earns $2,000 more per week than Sweet Eugene's
    - **Greater accounting profit**

What is Carport's opportunity cost of its location?

- Selling the location to Sweet Eugene's

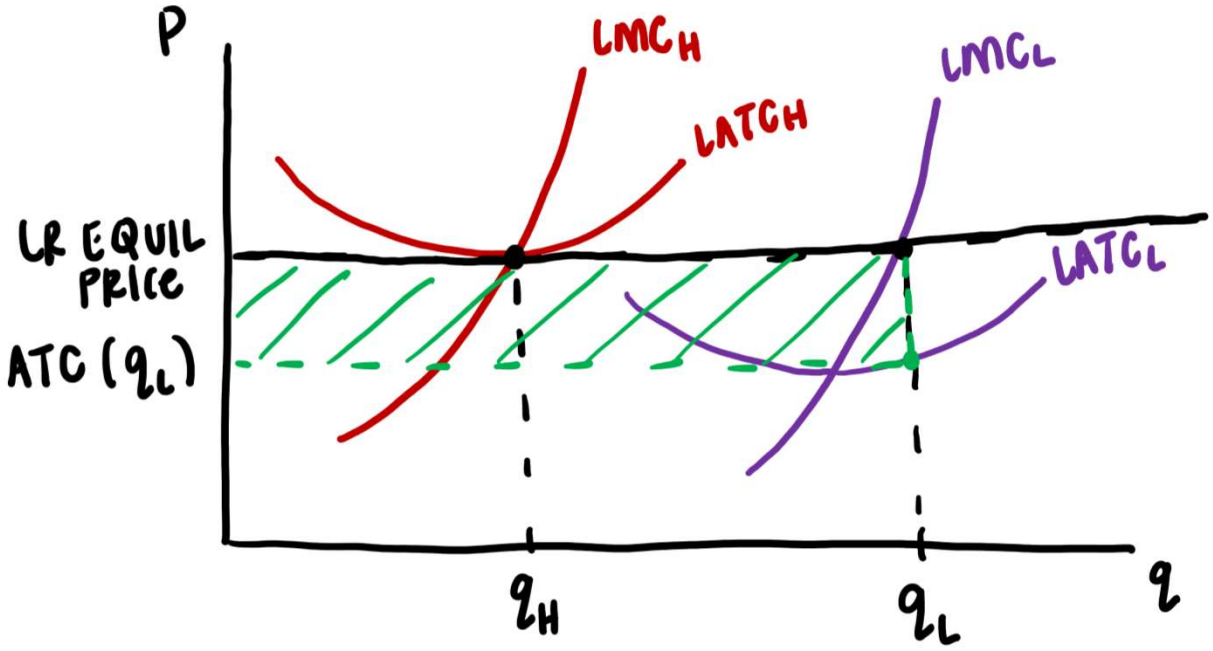
Economic rent is included in opportunity cost

- Economic profit is **no higher** than if Carport did *not* have the favorable location

Cost differences in perfect competition

Key takeaway: the long-run market price equals the minimum ATC of the highest-cost firm remaining in the industry.

- This highest-cost firm makes zero (economic) profit and zero producer surplus
- Other (lower-cost) firms earn a greater accounting profit and greater producer surplus relative to the high-cost firm. This extra return is economic rent.



GREATER ACCOUNTING PROFIT
↳ ECON. RENT = $(P - ATC_L) \cdot q_L$

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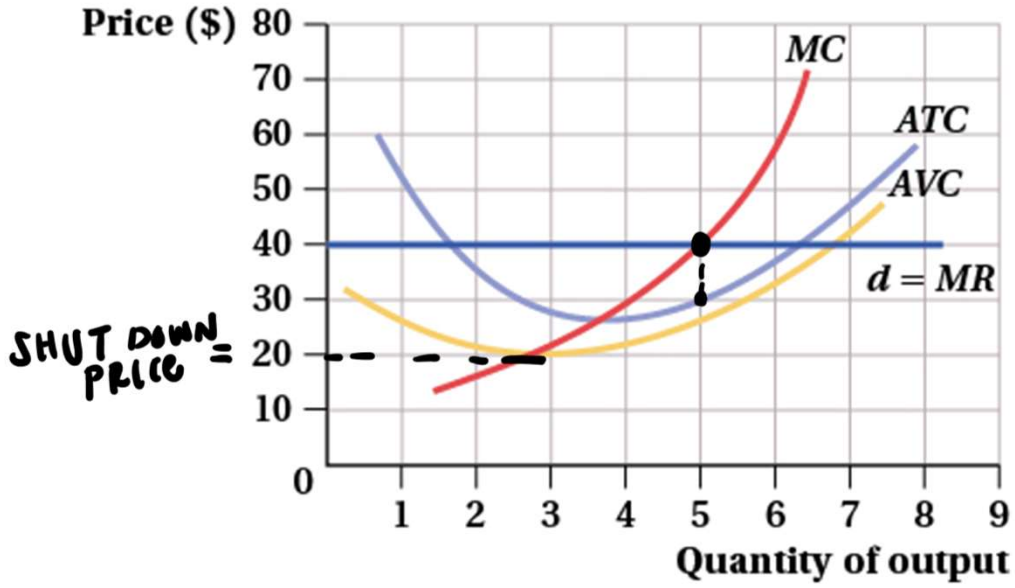
$\pi = TR - TC$
$= (P - ATC) \cdot Q$

Which of the following statements is TRUE?

SHUT DOWN IF:
TR < VC
P < AVC



✗ A. Profit is negative at the current profit-maximizing output level — $P = MR = MC$, $q^* = 5$, $\pi > 0$

✗ B. In the short run, the firm will shut down if the price falls below $26

✗ C. In long run equilibrium, the firm will face a higher market price — LR equil P = min ATC = ~$26

(D.) In the short run, the firm will operate as long as the market price is at least $20