

## [H. 14] PERFECT COMPETITION

- FIRMS ARE SMALL

FIRMS ARE "PRICE-TAKERS"

IDENTICAL OUTPUTS

- MINING, OIL, AGRICULTURAL

- LONG-RUN vs SHORT-RUN

EXIT vs SHUTDOWN

SELL K

PRODUCE & Q

- REVENUE

$$TR = P \times Q$$

$$\text{AVERAGE REVENUE} = \frac{TR}{Q} = \frac{P \times Q}{Q} = P$$

MARGINAL REVENUE: (CHANGE IN TR  
(MR) FROM 1 ADDITIONAL

$$MR_4 = TR_4 - TR_3$$

QUANTITY

# PROFIT MAXIMIZATION

- ① SET  $Q$  WHERE  $TR - TC$  IS BIGGEST
- ② SET  $Q$  WHERE  $MC = MR$

(OPPER (1b)  $\rightarrow P = \$10$   $\overset{=P}{\text{ONLY TRUE IN PERFECT COMPETITION}}$

| $Q$ | TR | TC | MR        | MC        | PROFIT |
|-----|----|----|-----------|-----------|--------|
| 0   | 0  | 10 | -         | -         | -10    |
| 1   | 10 | 14 | 10        | 4         | -4     |
| 2   | 20 | 20 | 10        | 6         | 0      |
| 3   | 30 | 28 | 10        | 8         | 2      |
| 4   | 40 | 38 | 10        | <u>10</u> | 2      |
| 5   | 50 | 50 | <u>10</u> | 12        | 0      |

$MC = MR$

$TC = FC + VC \leftarrow 0 \text{ AT } Q$

## [H. 14] WHEN TO SHUT DOWN

- CONTINUE TO OPERATE ( $Q > 0$ )  
AS LONG AS YOU CAN PAY  
THE COSTS OF OPERATING ( $VC$ )
- CONTINUE TO OPERATE UNDER  
NEGATIVE PROFITS. WHY?

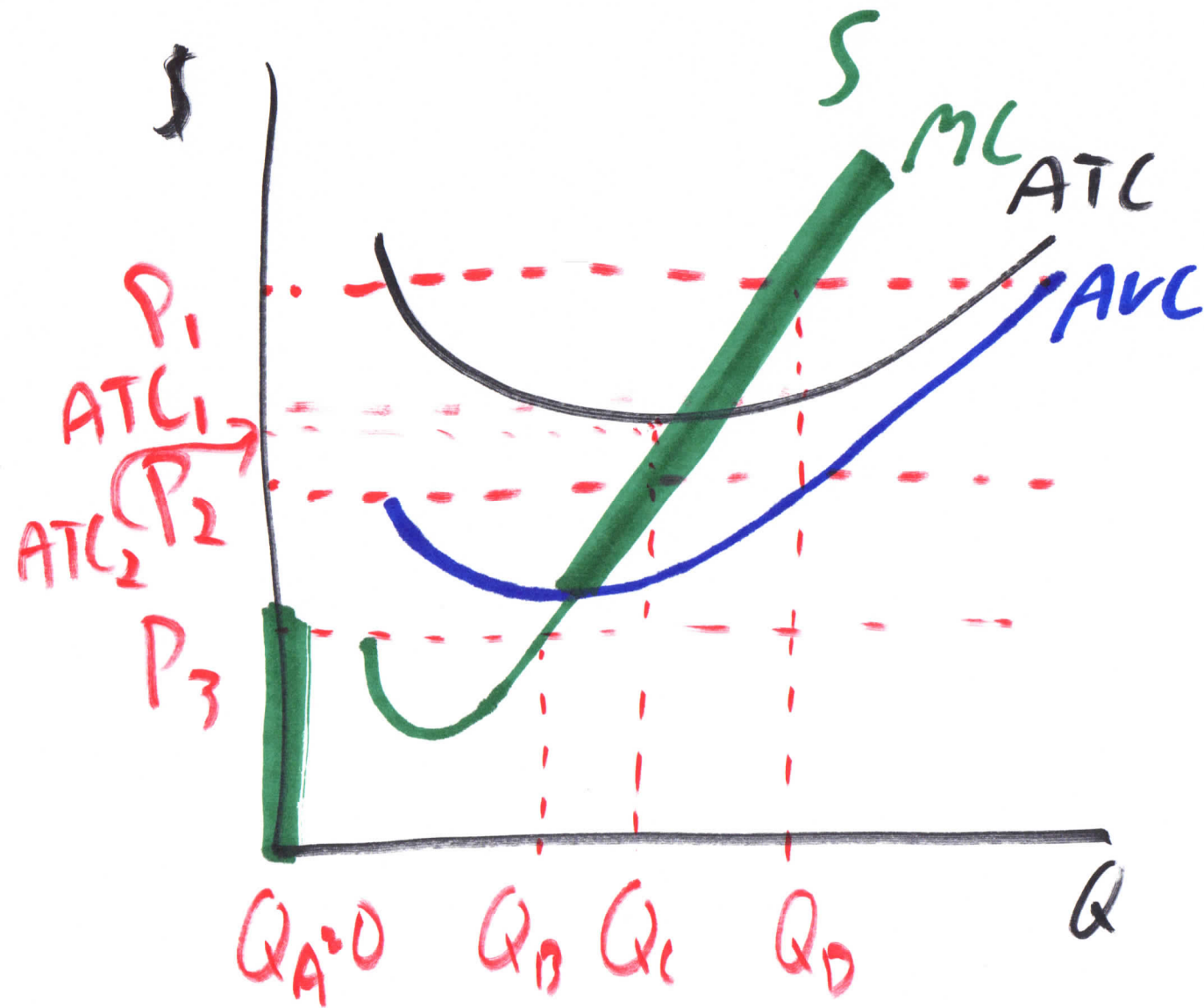
- **SUNK COSTS DON'T MATTER**  
**(FIXED COSTS)**

SHUT-DOWN  
CONDITION

IN SHORT-RUN, OPERATE  
 $(TR \geq VC) \Leftrightarrow (P \geq AVC)$

EXIT  
CONDITION ②

= IN LONG-RUN, OPERATE  
WITH 0 OR POSITIVE PROFITS  
 $(TR \geq TC) \Leftrightarrow (P \geq ATC)$



$$TR = P \times Q$$

$$MR_5 = TR_5 - TR_4$$

$$= 5P - 4P$$

$$= P$$

SET Q WHERE

$$MC = MR$$

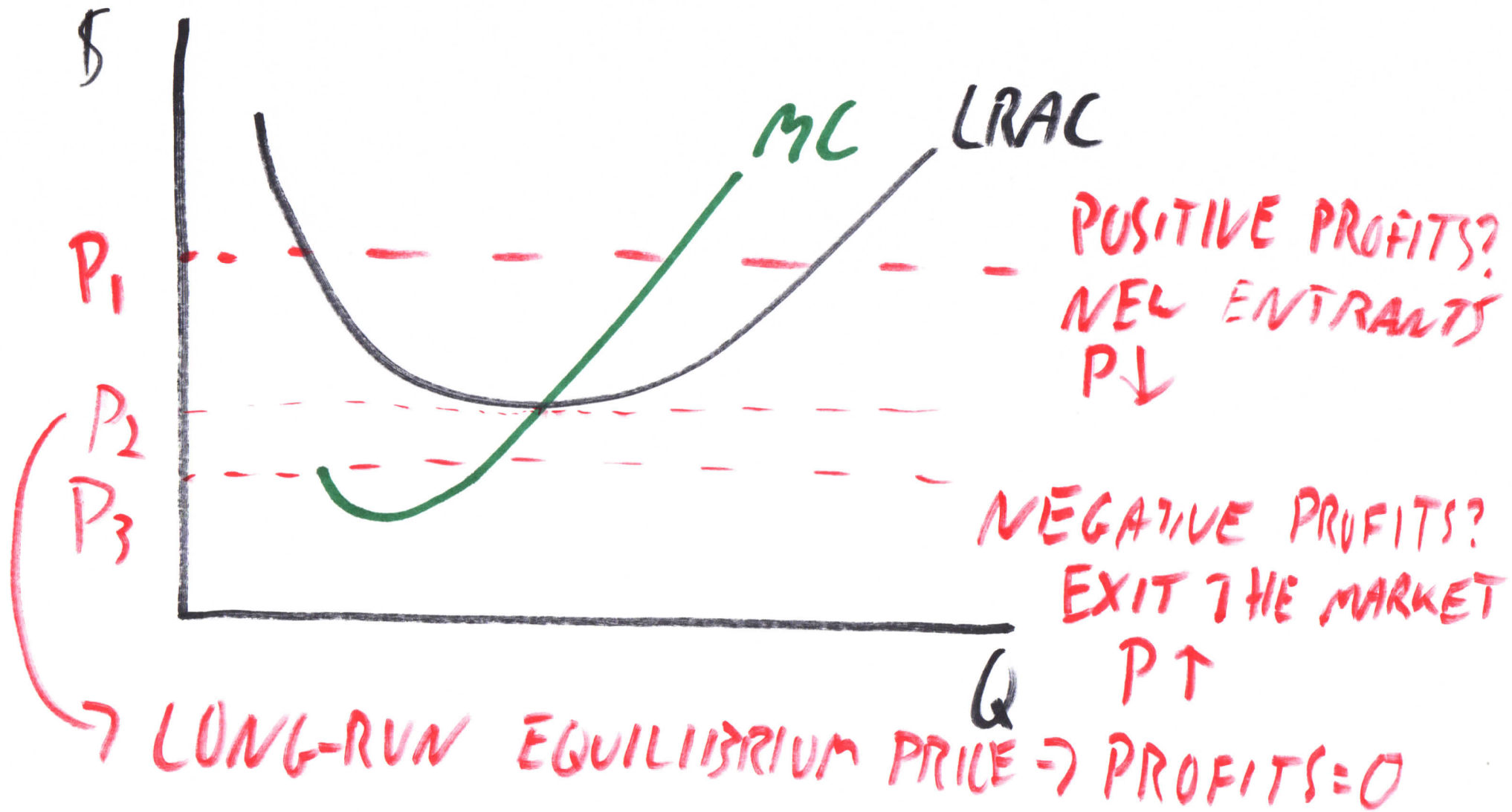
AT  $P_1 > ATC_1$

$$TR_1 > TC_1$$

AT  $P_2 < ATC_2$

$$TR_2 < ATC_2$$

# LONG-RUN

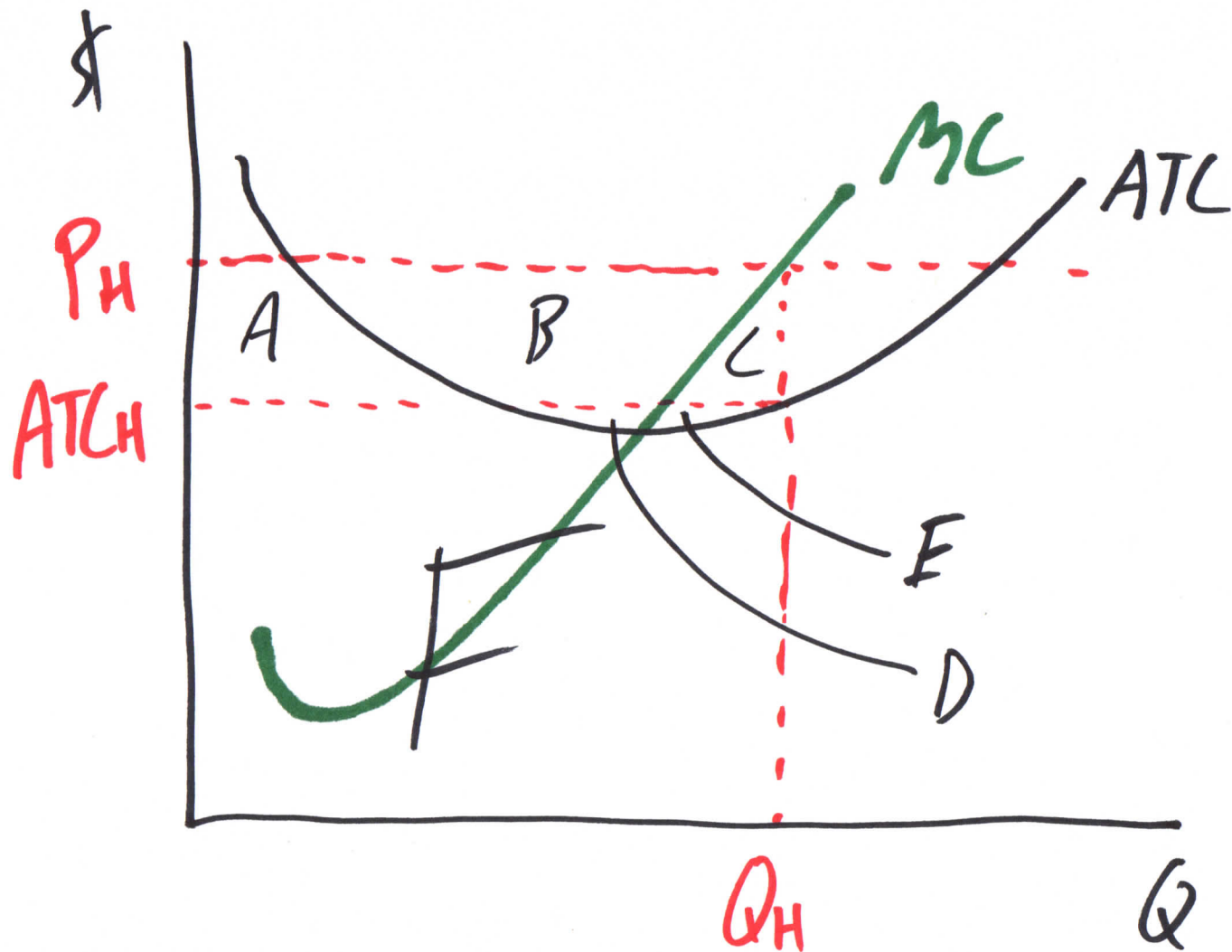


# AIRTRAN (CHS) MARKET (REV. PER FLIGHT = \$K)

| Q<br>FLIGHTS | TC  | TR  | MC | MR | ATC   | AVC |                     |
|--------------|-----|-----|----|----|-------|-----|---------------------|
| 0            | 10K | —   | —  | —  | —     | —   | ✓ Q <sub>LR</sub> * |
| 1            | 13K | 5K  | 3K | 5K | 13K   | 3   |                     |
| 2            | 16K | 10K | 3K | 5K | 8K    | 3   |                     |
| 3            | 20K | 15K | 4K | 5K | 6.67K | 3.3 |                     |
| 4            | 24K | 20K | 4K | 5K | 6K    | 3.5 |                     |
| 5            | 29K | 25K | 5K | 5K | 5.8K  | 3.8 | ✓ Q <sub>SR</sub> * |

# PROFIT GRAPHICALLY

$$= TR - TC = P \times Q - ATC \times Q = Q(P - ATC)$$



$$TR = P \times Q$$
$$= A + B + C + D + E + F$$

$$TC = ATC \times Q$$
$$= D + E + F$$

$$PROFIT = TR - TC$$
$$= A + B + C$$