Industry Supply in a Competitive market

(Reading: Varian Chapter 24)

Since every firm in the industry is a price-taker,

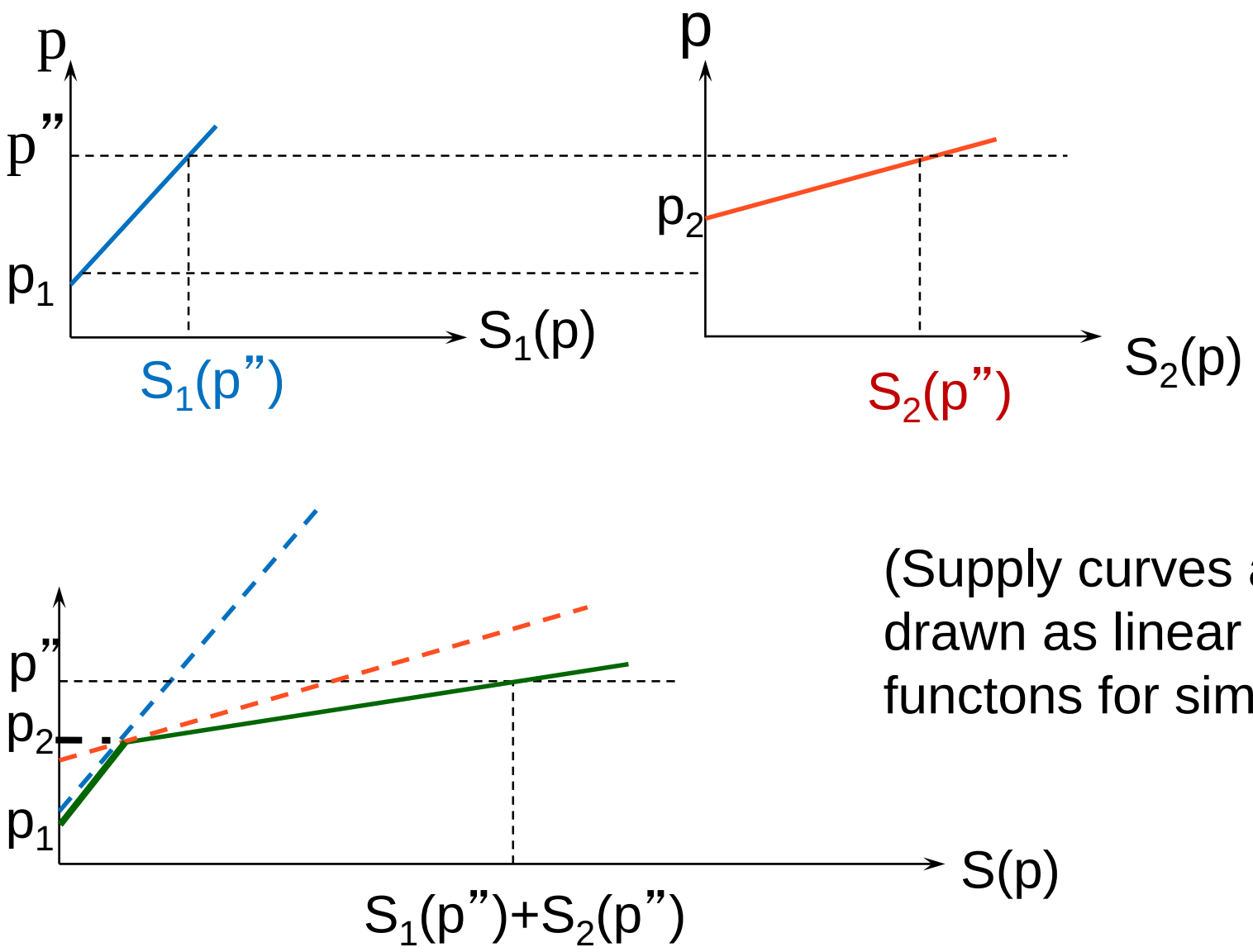
total quantity supplied at a given price is

the sum of quantities supplied at that price by

all the individual firms.

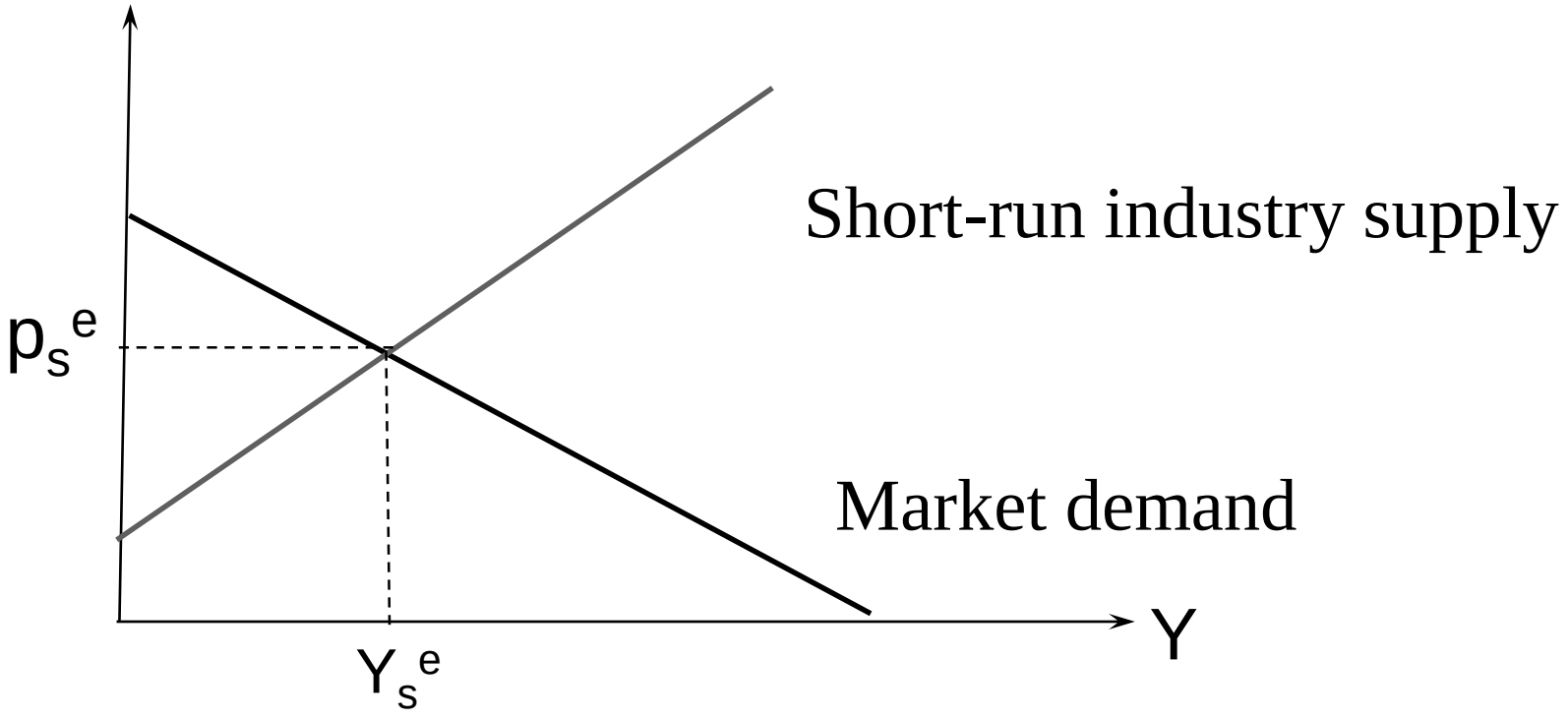
- Let n be the number of firms; i = 1, … ,n.
- In the short-run, n is temporarily fixed.
- $S_i(p)$ is firm i's supply function.
- So, the Industry Supply would be:

$$S(p) = \sum_{i=1}^{n} S_i(p).$$



(Supply curves are drawn as linear functons for simplicity)

Short-Run Industry Equilibrium

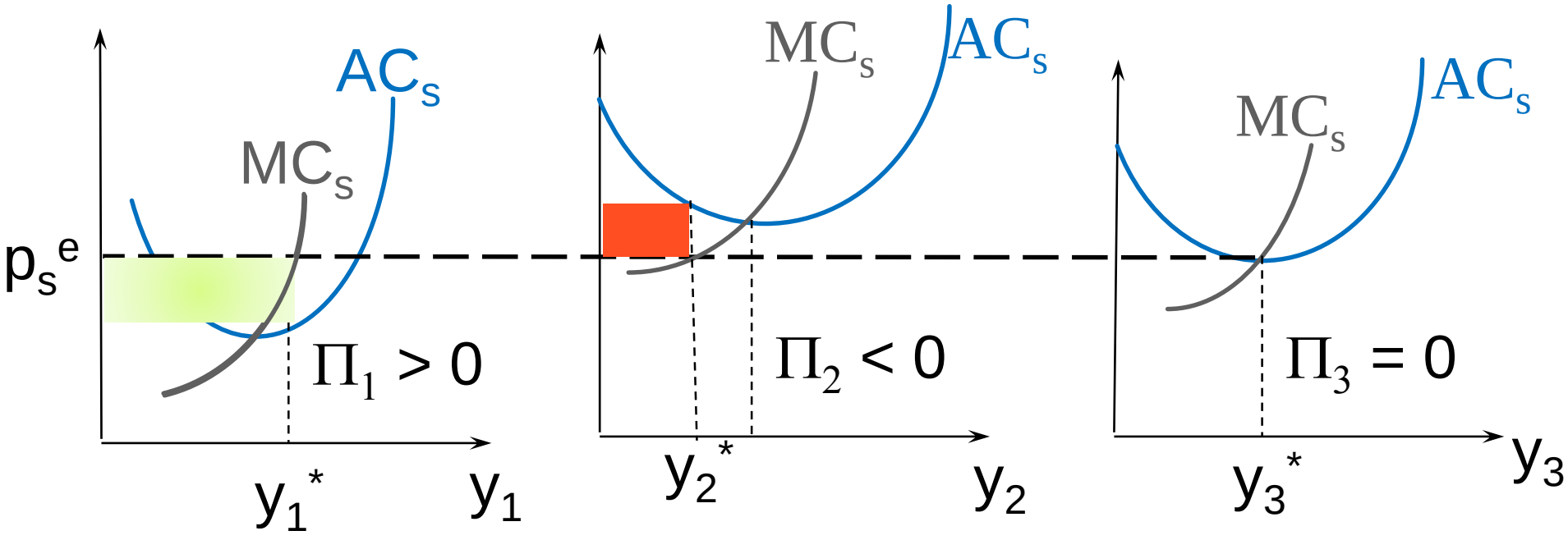


Short-run equilibrium price - clears the market

- taken as given by each firm.

In the short-run, neither entry nor exit can occur.

So, in a short-run equilibrium at the point $p_s^e = MCs$, firms may earn positive economics profits or suffer economic losses.



Firm 1 wishes to remain in the industry

Firm 2 wishes to exit From the industry.

Firm 3 is indifferent.

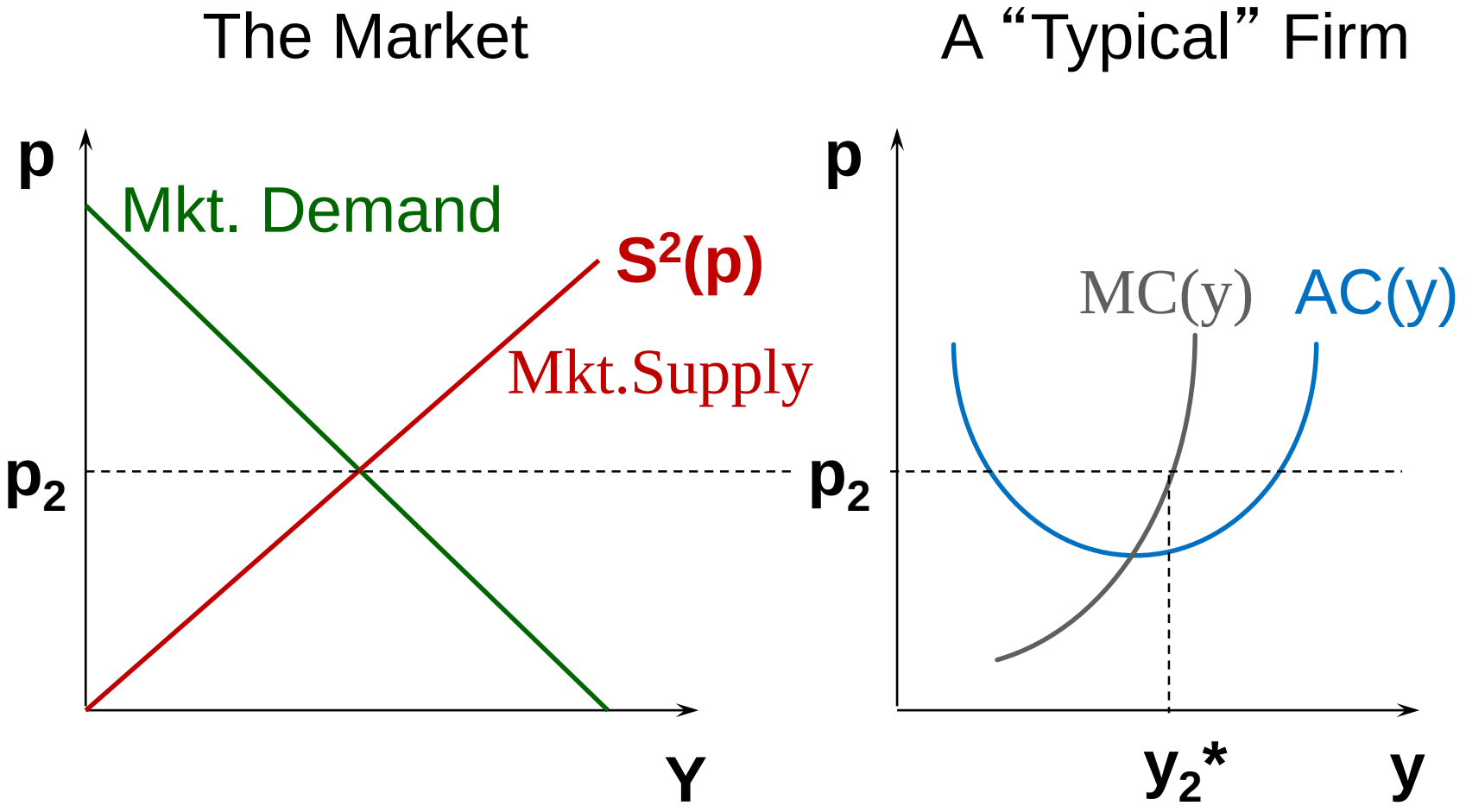
Long-Run Industry Supply

In the long-run, firms are free to exit and enter.

Economic profit is positive when $p_s^e > \min AC(y)$.

Entry increases industry supply, causing p_s^e to fall until $p_s^e = \min AC(y)$.

Suppose the industry initially contains only two firms.

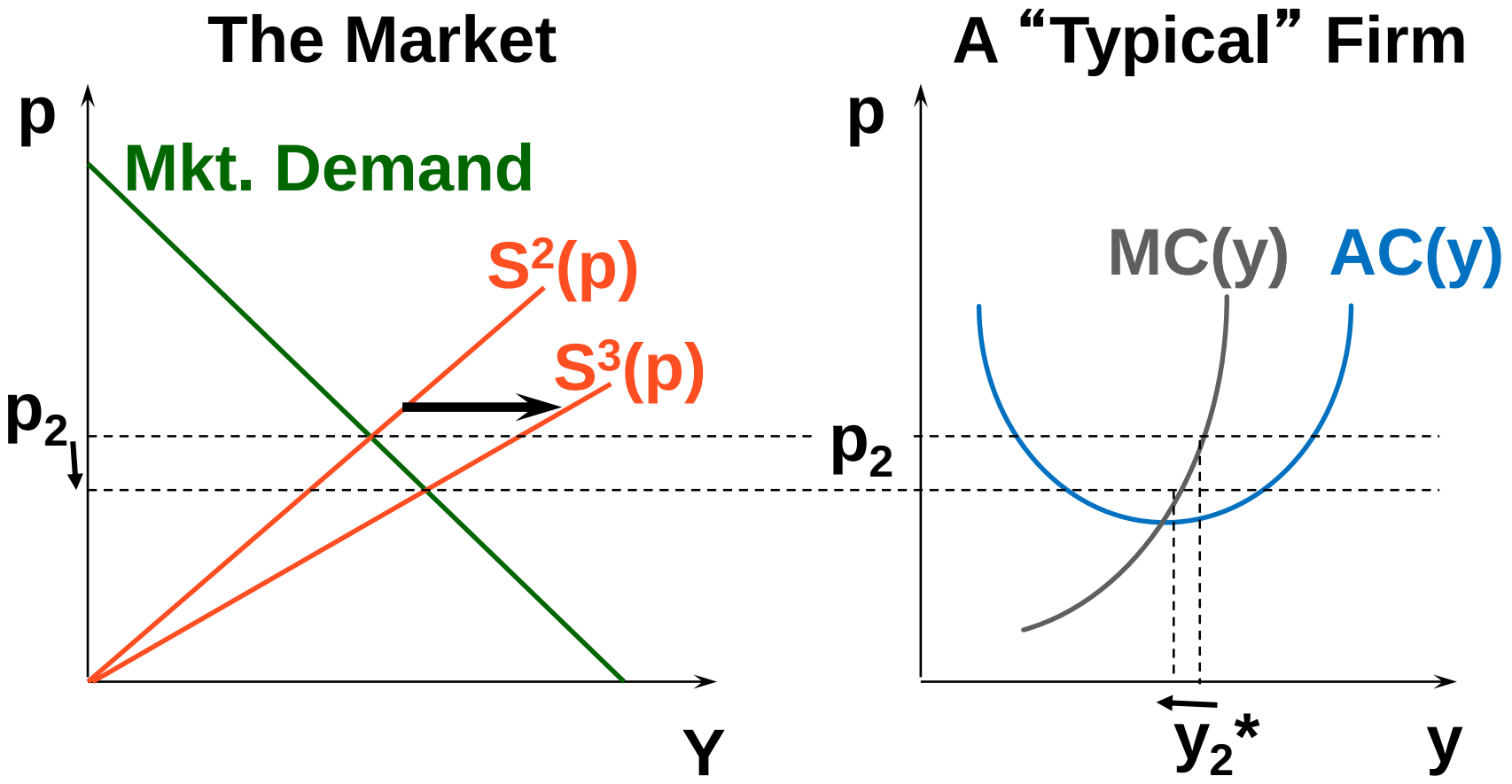


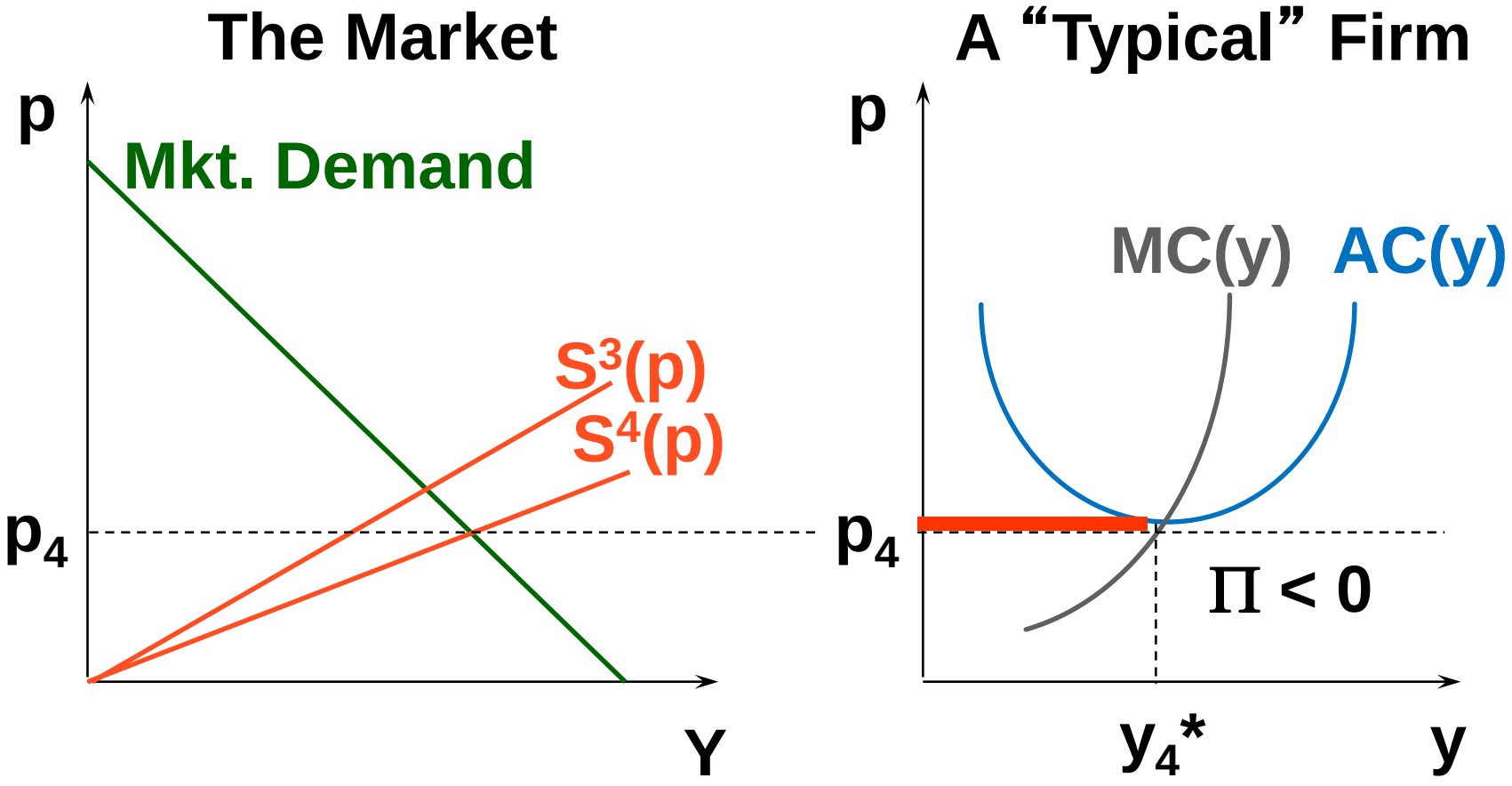
Market-clearing price is p_2. Each firm produces output y_2^*.

Positive profit by firms, induce entry by another firm.

Market supply shifts outwards so Market price falls.

Each firm produces less and earns lower profit.

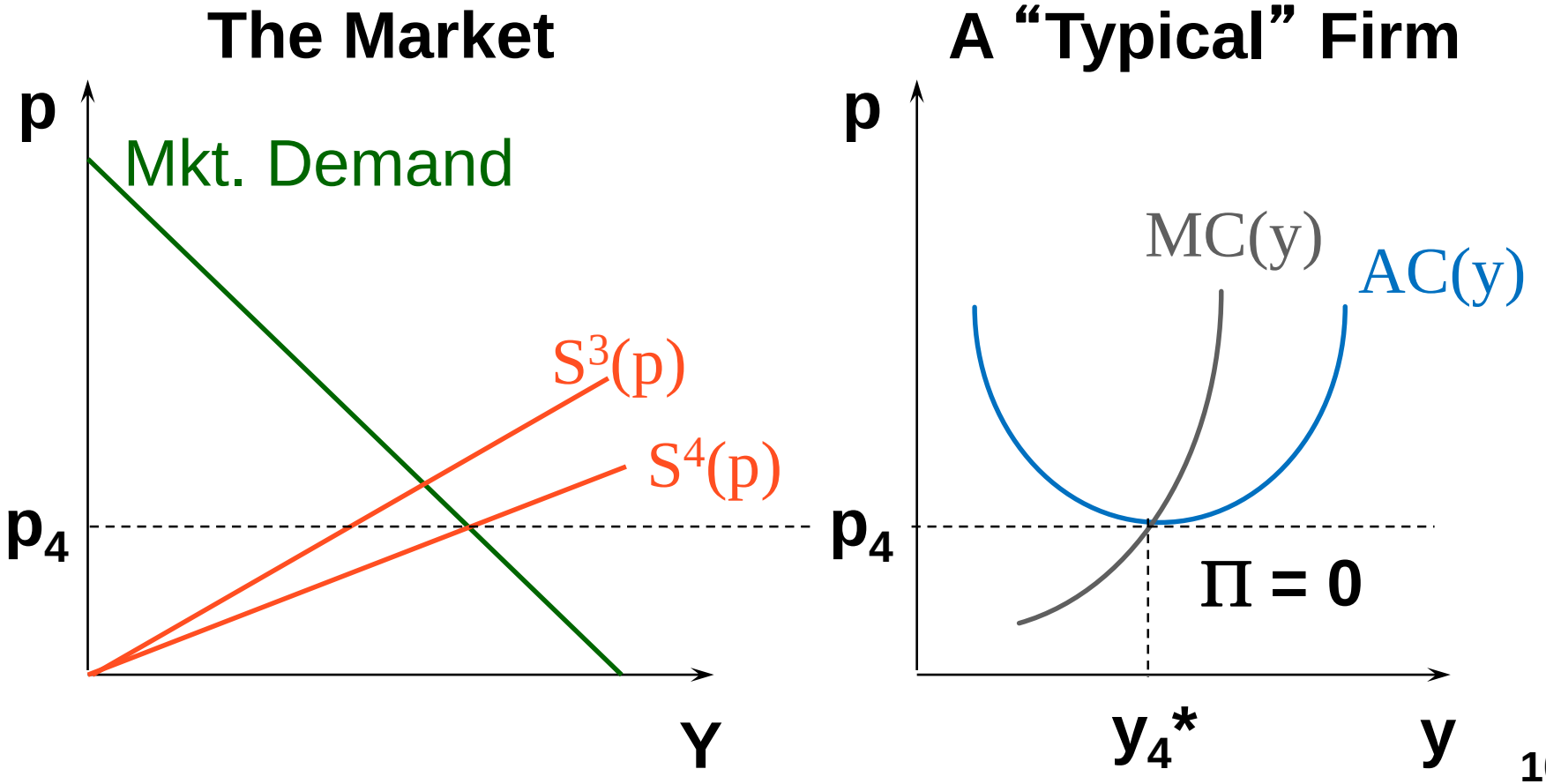




If too many firms have entered, equilibrium price becomes low enough to result in losses for the firms. So, no more entry. There will be exits so that market supply reduces.

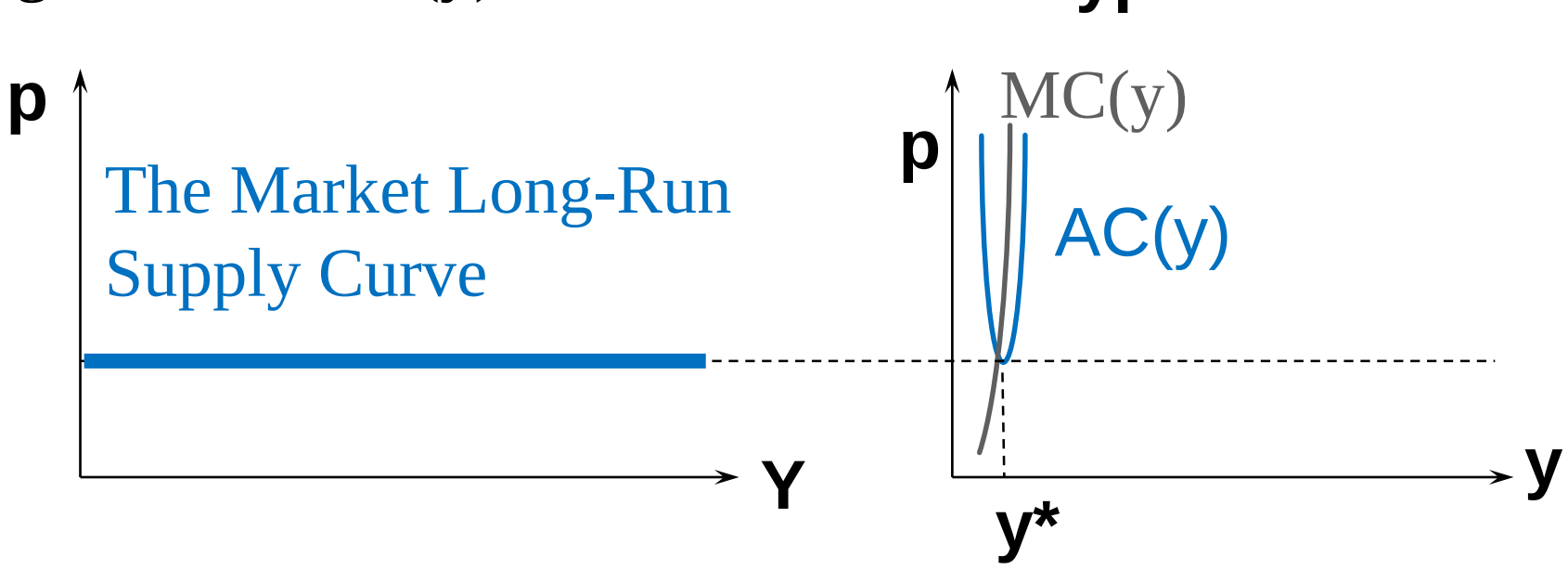
Long-run number of firms in the industry is the largest number for which the market price is at least as large as min AC(y).

Once $p_s^e = \min AC(y)$, no more entry or exit.



Long-Run Industry Supply Curve

As each firm gets "smaller" relative to the industry, the long-run industry supply curve approaches a horizontal line at the height of min AC(y).



Long-run market price is $p^e = \min_{y>0} AC(y).$