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# 4 Firm Concentration Ratio

$$1000 + 000 + 000 = 1000\%$$

Number of  
Firms

Share of the  
market





2

10,000

100%

50%

1000/10,0000

=0.01%

The Herfindahl-  
Hirschman Index HHI

$$1000^2 = 100,000$$

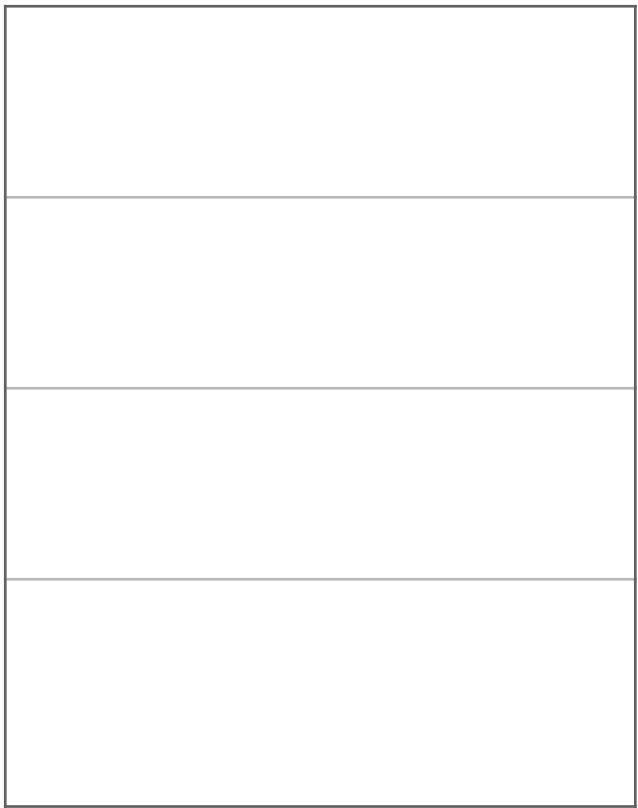


$$50 + 50 + 0 + 0 = 100\%$$

$$0.01 + 0.01 + 0.01 + 0.01 = 0.04\%$$

$$50^2 + 50^2 = 2 \times (50^2) = 5,000$$

$$10,000 \times (0.01^2) = 1$$

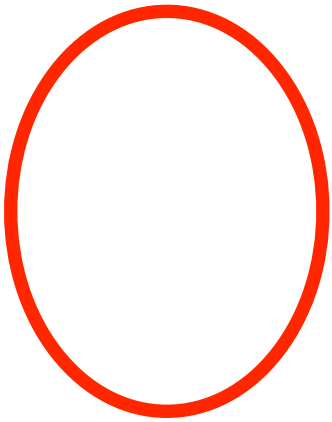


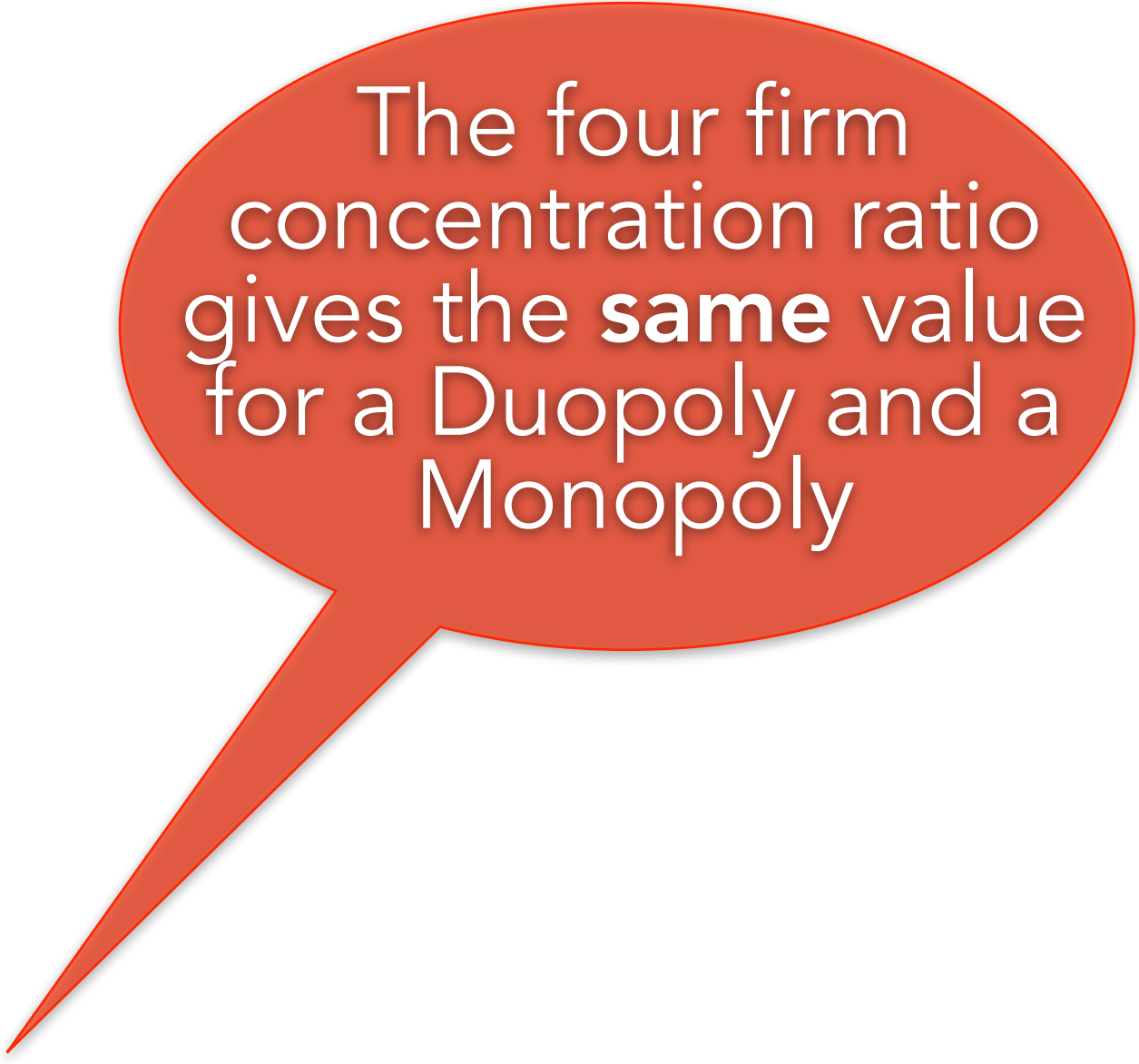
Monopoly

Duopoly

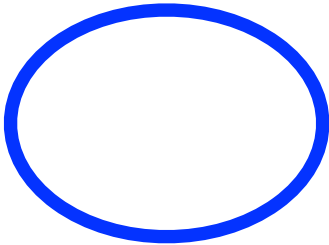
# Perfect Competition

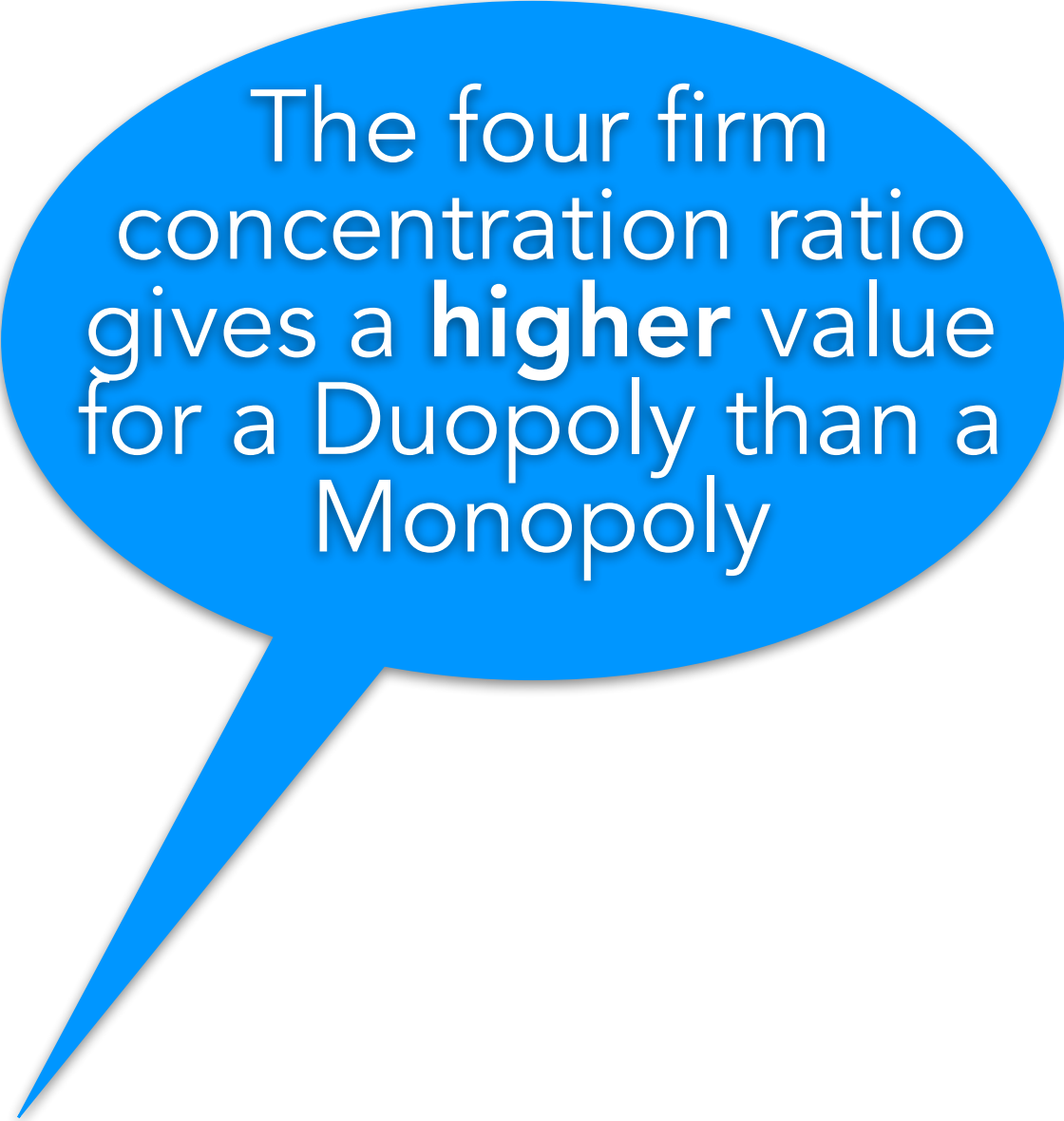




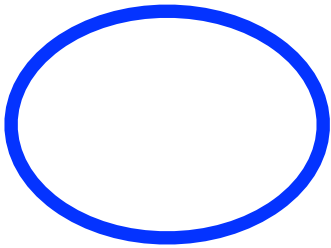


The four firm  
concentration ratio  
gives the **same** value  
for a Duopoly and a  
Monopoly





The four firm  
concentration ratio  
gives a **higher** value  
for a Duopoly than a  
Monopoly



The Herfindahl-Hirschman Index (H<sub>h</sub>) is a more accurate measure of concentration

|                     | Number of Firms | Share of the market   | 4 Firm Concentration Ratio     | The Herfindahl-Hirschman Index HHI    |
|---------------------|-----------------|-----------------------|--------------------------------|---------------------------------------|
| Monopoly            | 1               | 100%                  | $100+0+0+0 = 100\%$            | $100^2 = 10,000$                      |
| Duopoly             | 2               | 50%                   | $50+50+0+0 = 100\%$            | $50^2+50^2 = 2 \times (50^2) = 5,000$ |
| Perfect Competition | 10,000          | $100/10,000 = 0.01\%$ | $0.01+0.01+0.01+0.01 = 0.04\%$ | $10,000 \times (0.01^2) = 1$          |

The four firm concentration ratio gives the **same** value for a Duopoly and a Monopoly

The four firm concentration ratio gives a **higher** value for a Duopoly than a Monopoly

The Herfindahl-Hirschman Index HHI is a more accurate measure of concentration



# A Comparison of Various Market Structures

| Structure<br>Characteristics | Monopoly   | Oligopoly   | Monopolistic Competition                              | Perfect Competition                  |
|------------------------------|--|---|---|--------------------------------------|
| Number of Firms              | One  | Few   | Many  | Almost infinite                      |
| Barriers to Entry            | Significant  | Significant   | Few   | None                                 |
| Pricing Decisions            | $MC = MR$  | Strategic pricing, between monopoly and perfect competition | $MC = MR$   | $MC = MR = P$                        |
| Output Decisions             | Most output restriction                              | Output somewhat restricted                                  | Output restricted somewhat by product differentiation | No output restriction                |
| Interdependence              | Only firm in market, not concerned about competitors | Interdependent strategic pricing and output decision        | Each firm acts independently                          | Each firm acts independently         |
| Profit                       | Possibility of long-run economic profit              | Some long-run economic profit possible                      | No long-run economic profit possible                  | No long-run economic profit possible |
| $P$ and $MC$                 | $P > MC$   | $P > MC$  | $P > MC$  | $P = MC$                             |