

# BS2243 – Lecture 9

## Advertisement

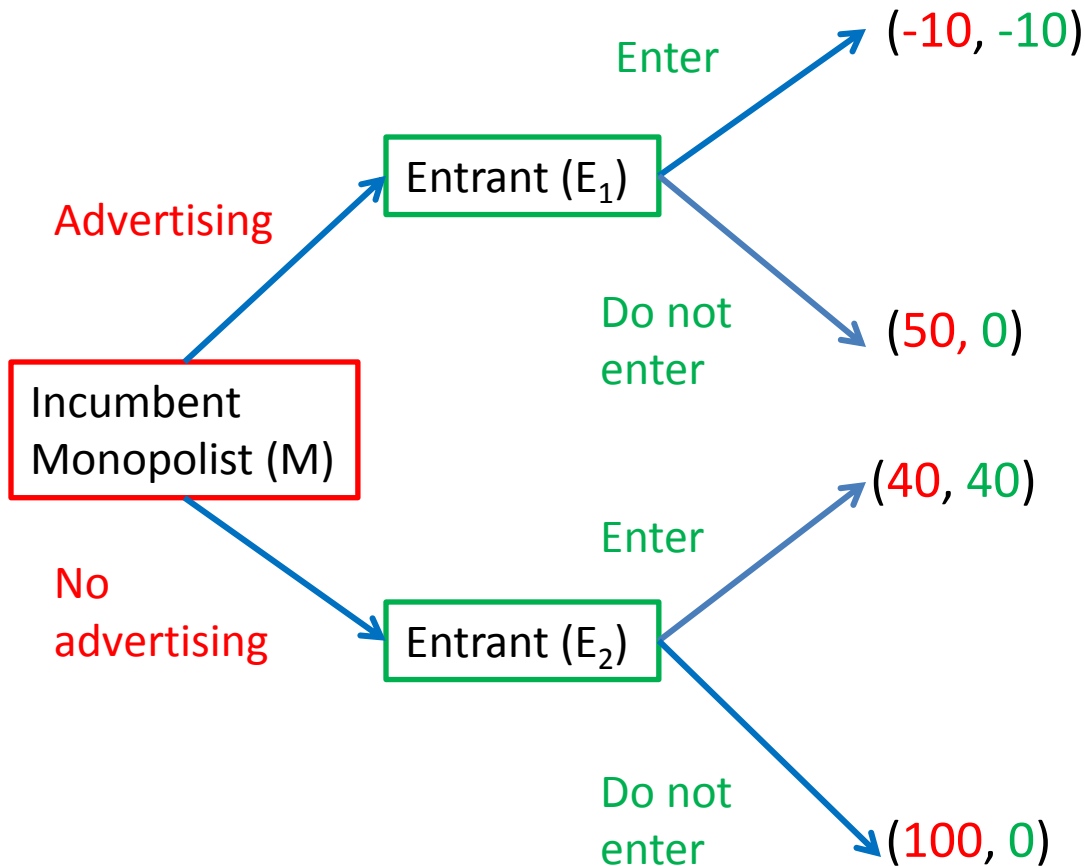
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(Dr. Sumon Bhaumik)

# Why advertise?

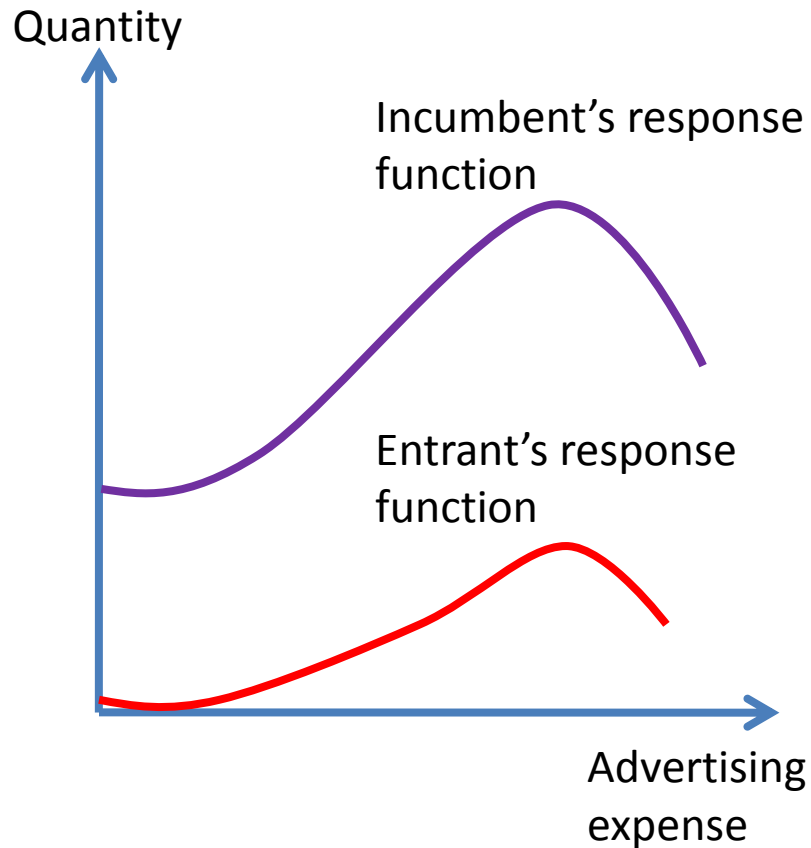
- Building brands
- Creating markets for new products (scope economies)
- Price competition / Price protection
- Barrier to entry
- Product differentiate

# Barrier to entry – I

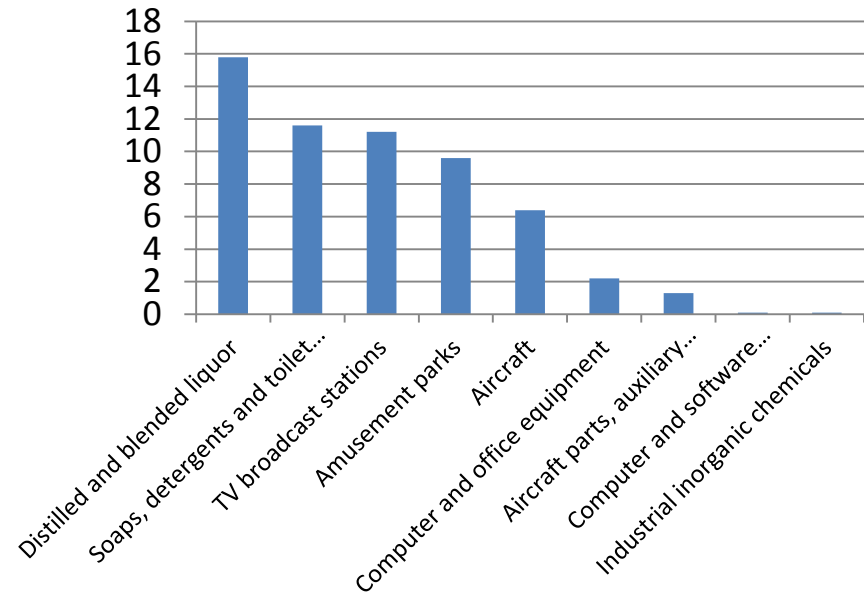


- Subgames:
  - Start at nodes M, E<sub>1</sub> and E<sub>2</sub>
- There is entry in equilibrium for the subgame starting at E<sub>2</sub>, but entry does not happen in equilibrium if the game starts at M
- There is no entry in equilibrium for the subgame starting at E<sub>1</sub>, and there is no entry in equilibrium also if the game starts at M
- The latter is a *subgame perfect equilibrium*

# Barriers to entry – II

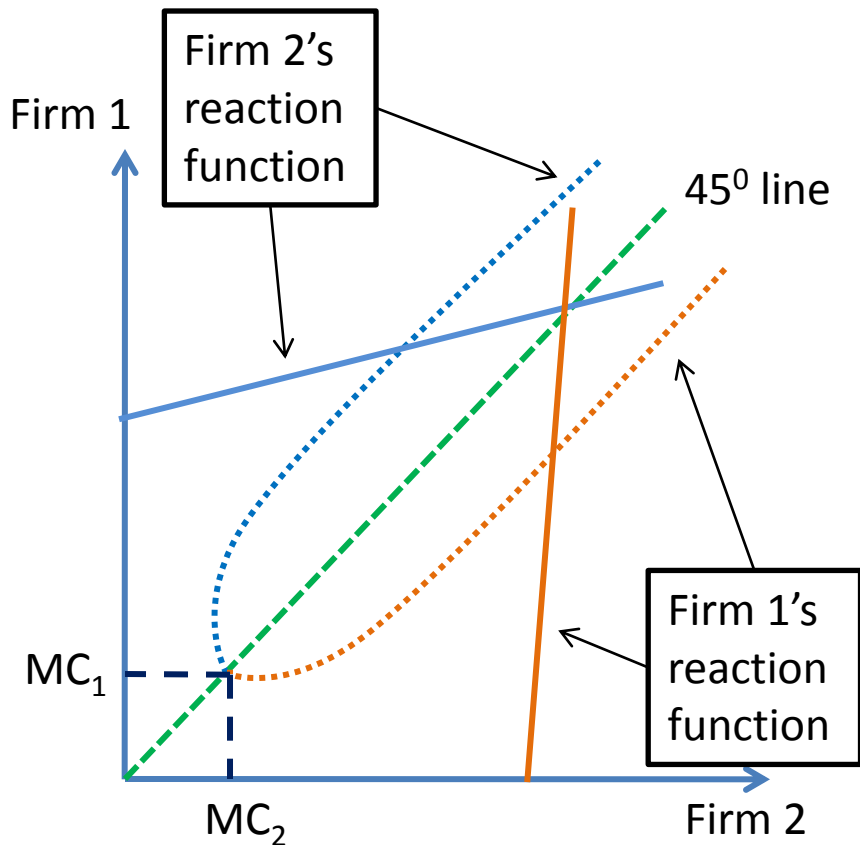


2004 US advertising/sales (%)



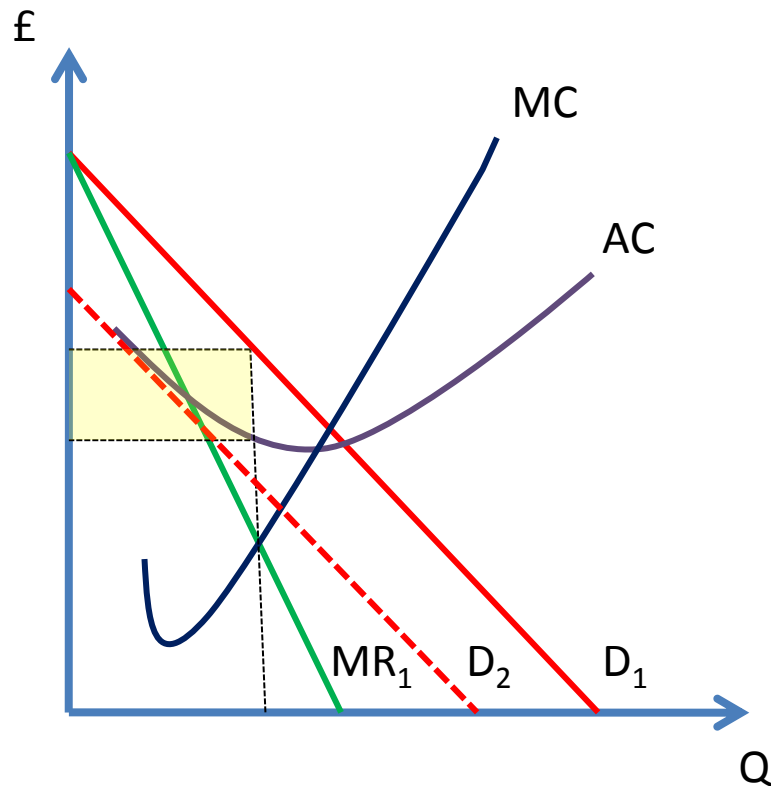
Source: Waldman & Jensen (pp. 449-450)

# Product differentiation – I



- Differentiated product in Bertrand competition
- Price in equilibrium significantly higher than MC
- Recapitulate: without product differentiation,  $P = MC$  in equilibrium

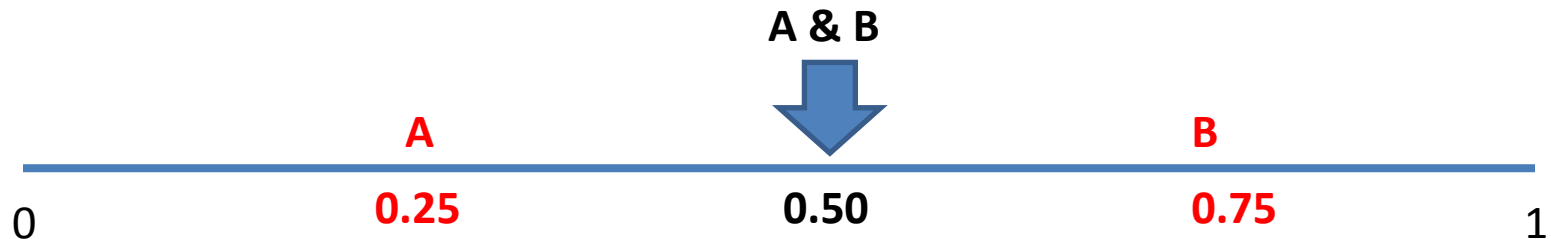
# Product differentiation – II



- Monopolistic competition
- Product differentiation implies market power, and hence downward sloping demand curve
- Firm earns positive economic profit in the short run, but zero economic profit in the long run
- Inefficiencies:
  - $P > MC$  and hence deadweight loss
  - If profit maximising output is less than the output at which AC is minimised, there is excess capacity

# Product differentiation – III

- Is there too much product differentiation?
  - Welfare is the sum of consumer surplus and profits
  - If there is entry, there is an increase in consumer surplus, but individual firms ignore this and focus on their private benefits
  - If there is entry, there is a decrease in profits, but individual firms will ignore this as well, and focus on their private benefits
  - The outcome, therefore, is ambiguous; both too much product differentiation and too little product differentiation are feasible
- Example of inefficient product differentiation



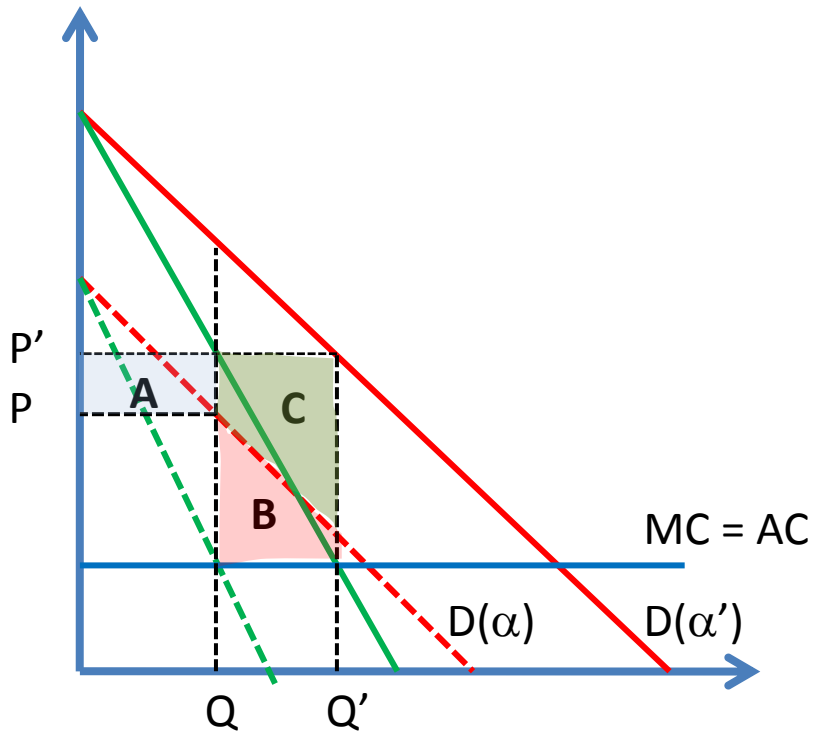
Transportation cost for consumers would have been lower if, in equilibrium, firms A and B did not end up in the middle

# Product differentiation and adverse selection

- Consumers have an informational asymmetry vis-a-vis the sellers
- This can lead to market failure
- Example:
  - Used car market
  - 50% of cars are good, and 50% of them are bad
  - A good car is valued at £5000, and a bad car is valued at £1000
  - A rational customer would not pay more than £3000 for a car
  - Hence, there will be a market failure, i.e., there will be no trades in the used car market
- Do advertisements increase or decrease the likelihood of adverse selection?

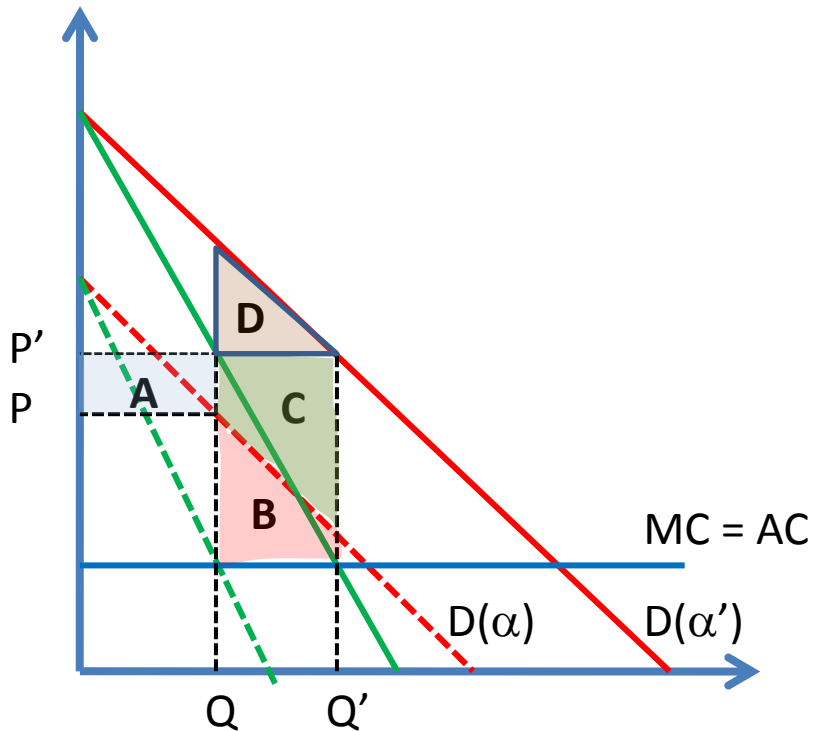


# Expected impact of advertisement



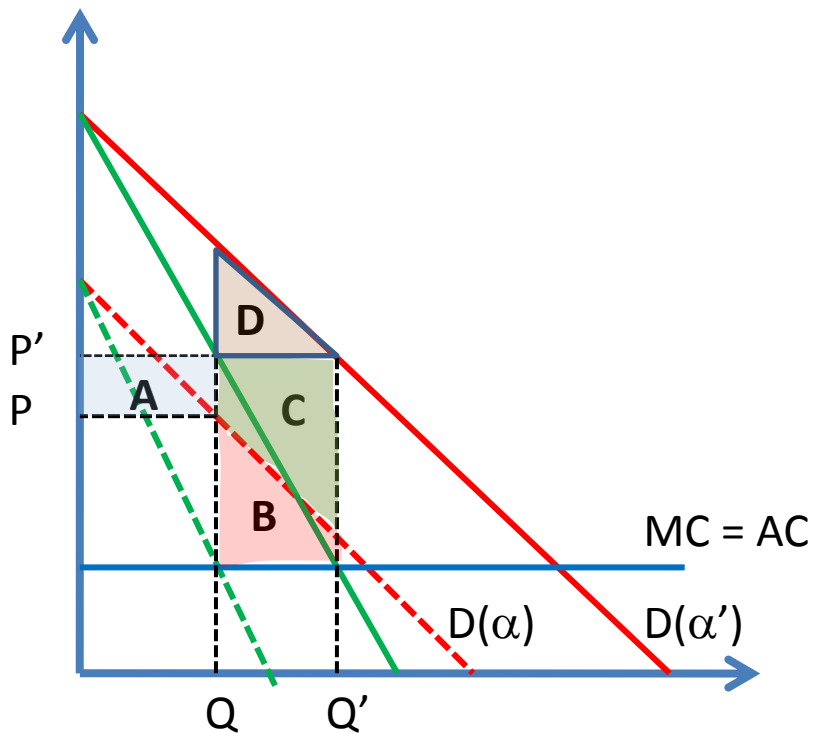
- Advertisement expenditure ( $E = \alpha' - \alpha$ ) shifts demand curve from  $D(\alpha)$  to  $D(\alpha')$
- Increase in profit
  - Initial amount ( $Q$ ) at a higher price ( $P'$ )  
 $= (P' - P)Q = \mathbf{A}$
  - Extra amount ( $Q' - Q$ ) at price  $P'$   
 $= (Q' - Q)P' = \mathbf{B} + \mathbf{C}$
- Strategic question  
 $(\alpha' - \alpha) ? (A + B + C)$
- Implication of economic theory
  - Marginal cost of advertising should equal its marginal benefit

# Welfare effects of advertisement – I



- $D(\alpha)$  represents pre-advertising preferences, and  $D(\alpha')$  represents post-advertising preferences
- Advertising raises price to  $P'$  and quantity to  $Q'$
- At pre-advertising preferences:
  - Increase in net social welfare  
 $= B - E$   
 (where  $E$  is the advertising expense)
  - Increase in profit net of advertising expense  
 $= A + B + C - E$
- Implication: Private benefit of advertising to firms exceeds the social value of advertising

# Welfare effects of advertisement – II



- Note also that the following can happen simultaneously
  - $A + B + C - E > 0$
  - $B - E < 0$
- But we cannot have
  - $B - E > 0$
  - unless we also have  $A + B + C - E > 0$
- Implication: Society cannot benefit from advertising unless the firm's profit rises on account of advertising
- At post-advertising preferences:
  - Increase in social welfare
    - $= B + C + D - E$
    - $\approx B - E$  (if C & D are small)
  - Implication: For small changes in sales, net change in social welfare is roughly the same irrespective of whether or not advertising changes the preferences of the consumers

# Is there too much advertising?

- Gains from advertisements
  - Increase in the size of the market
  - Increase in the market share of the firm advertising its product
- Implication
  - Advertising expenses are likely to be greater under oligopoly than under monopoly
  - Advertising expenses are likely to be (close to) zero under perfect competition
- Advertising expenses would have an inverted-U relationship with market concentration

	Firm B: High advertising expenses	Firm B: Low advertising expenses
Firm A: High advertising expenses	(100, 100)	(130, 80)
Firm B: Low advertising expenses	(80, 130)	(120, 120)

{*High, High*} is the dominant strategy equilibrium.