TYBA
Micro Economics III
Sem V

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Conditions for Price Discrimination

1. The market must be divided into sub-markets with different price elasticities.
2. There must be effective separation of the sub-markets
3. Non –transferability of goods : No exchange or no resale must not be possible
4. Geographical distance between the markets must be sufficiently long.
5. Political Barriers: Country's borders, trade allowed across borders.
6. Tariff Barriers: Home market is protected through tariffs the high price can be charged in home market and competitive price in international market.
7. Ignorance : When consumers are ignorant about the price

Conditions for Price Discrimination

8. Negligible price difference : Attitude of indifference on the part of consumers.
9. Price- Quality link
10. Location : Rich locality = Higher price

    Poor locality = Lower price
11. Government's sanction: For social welfare

Conditions for Profitable Price Discrimination

1. **Difference in Elasticity**

- Formula of MR and AR with elasicity of demand:

$$MR = AR (e – 1) / e$$

If e is same for various markets then, price discrimination is possible but not profitable.

Eg: Market A, e = 2 and Market B, e = 5 and AR for both = 20, then MR?

- Price in A can be increased as demand elasticity is 2 and sales wont be that affected
- Price in B can be decreased as demand elasticity is 5, and sales can increase

2. Distribution of Output: Expected demand can increase in elastic market, so more will be sold.

Equilibrium of a Price Discriminating Monopolist

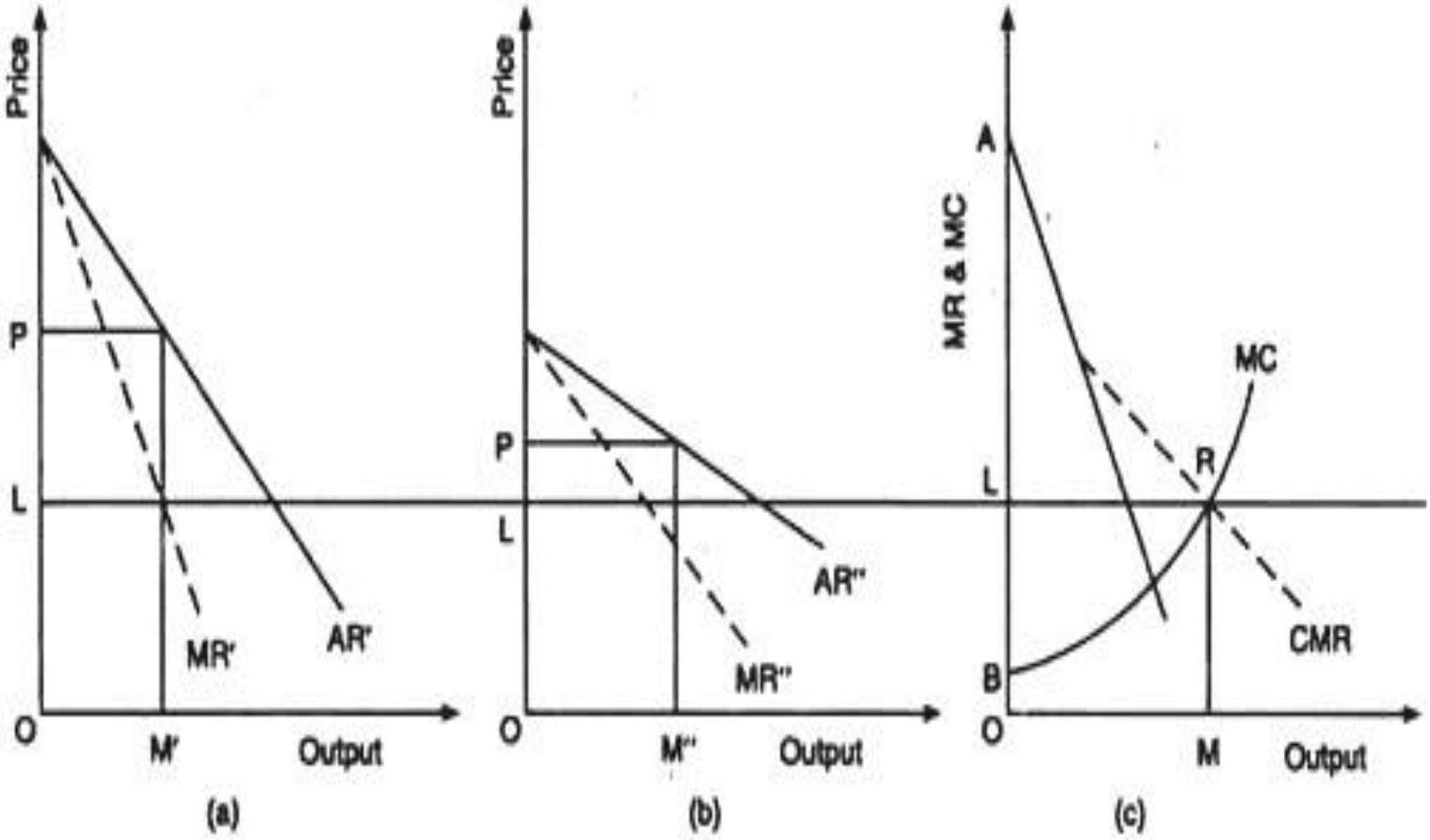


Fig. 10 : Equilibrium of a Discriminating Monopolist

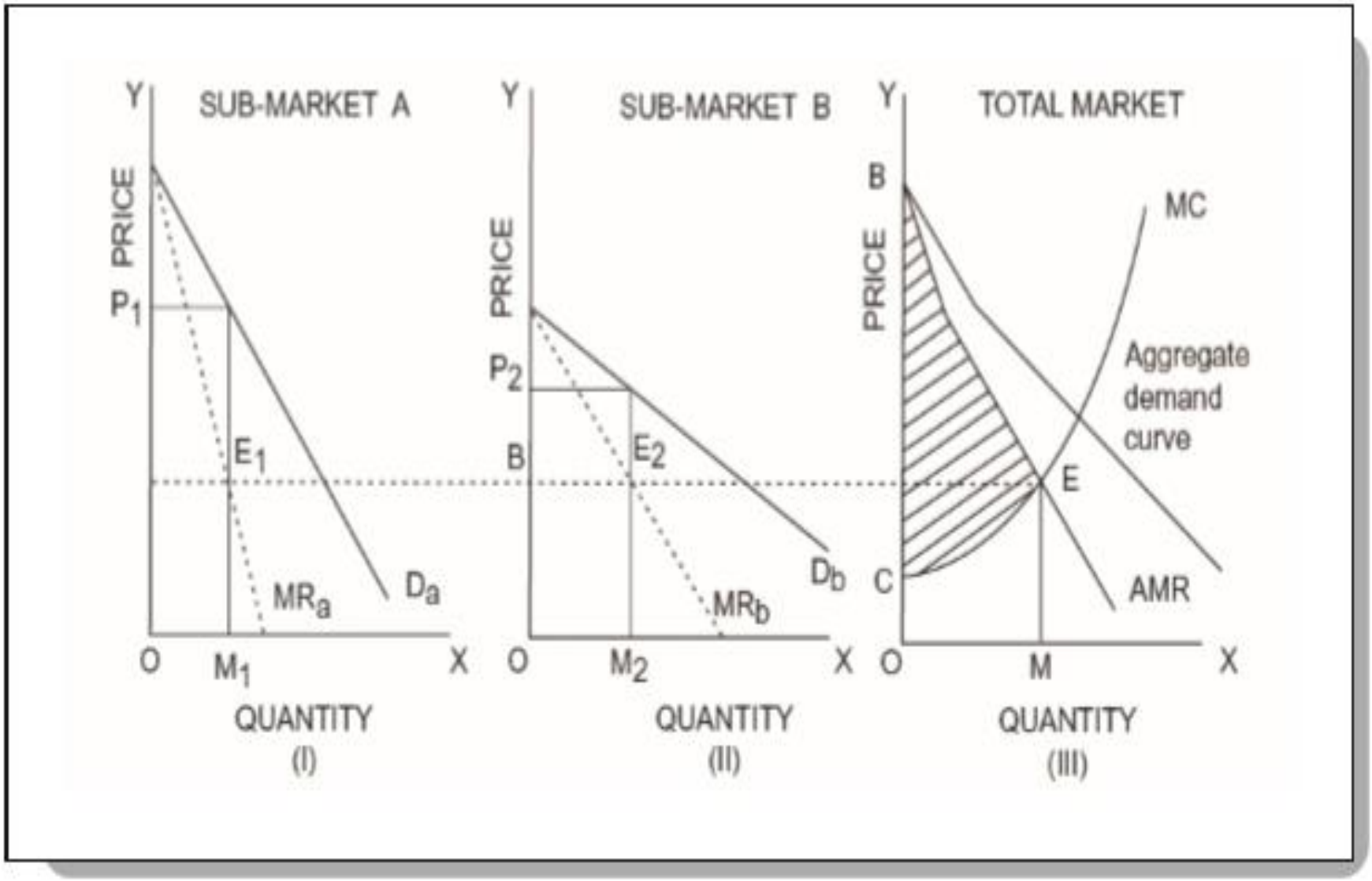


Fig. 1: Fixation of Total Output and different price in the two sub-markets by the discriminating monopolist

COURNOT'S MODEL OF DUOPOLY

ASSUMPTIONS OF COURNOT'S MODEL

- Only 2 firms A and B
- Sells off Mineral water i.e. homogeneous product
- Each firm assumes that the other firm's output will be same and that the rival firm will not react to his decision to change his output
- Marginal cost = zero
- Both firms reach equilibrium at MR = MC and also maximize profits.
- Each firm faces a demand curve with a constant negative slope. They know the market demand curve.

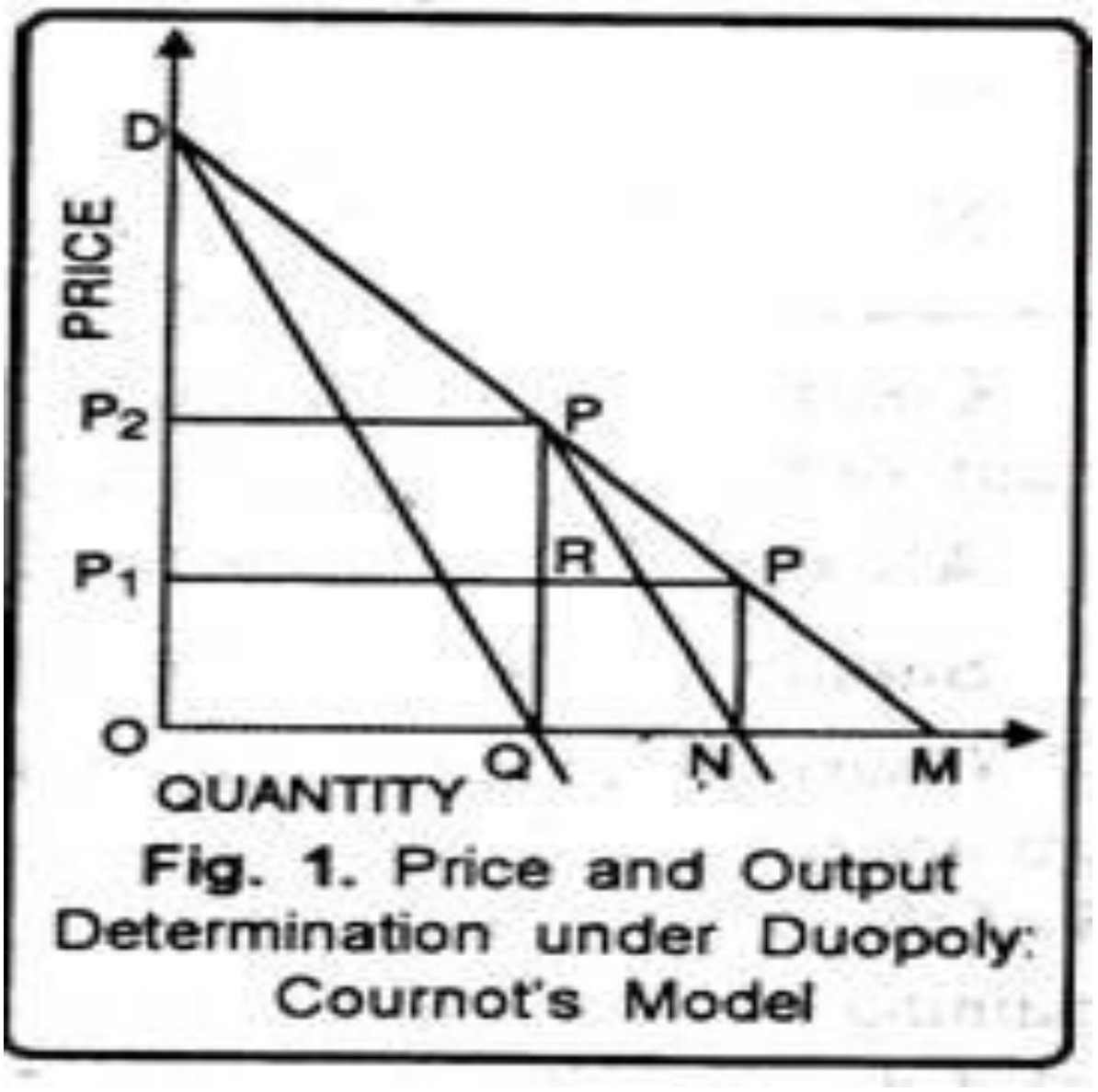


Fig. 1. Price and Output Determination under Duopoly: Cournot's Model

Explanation

- Firm A enters the market first
- Faces DM as market demand curve
- MC = 0
- Therefore equilibrium at MR= MC = 0
- This is arrived at ½ of OM = OQ
- This is because MR lies exactly half way between Y axis and AR= Demand curve
- OQ = QM
- Now firm B enters the market, assuming that A will continue producing OQ and assumes that PM is the demand for itself
- Firm B also produces ½ of QM = ½ (1/2 OM) =1/4 of OM.

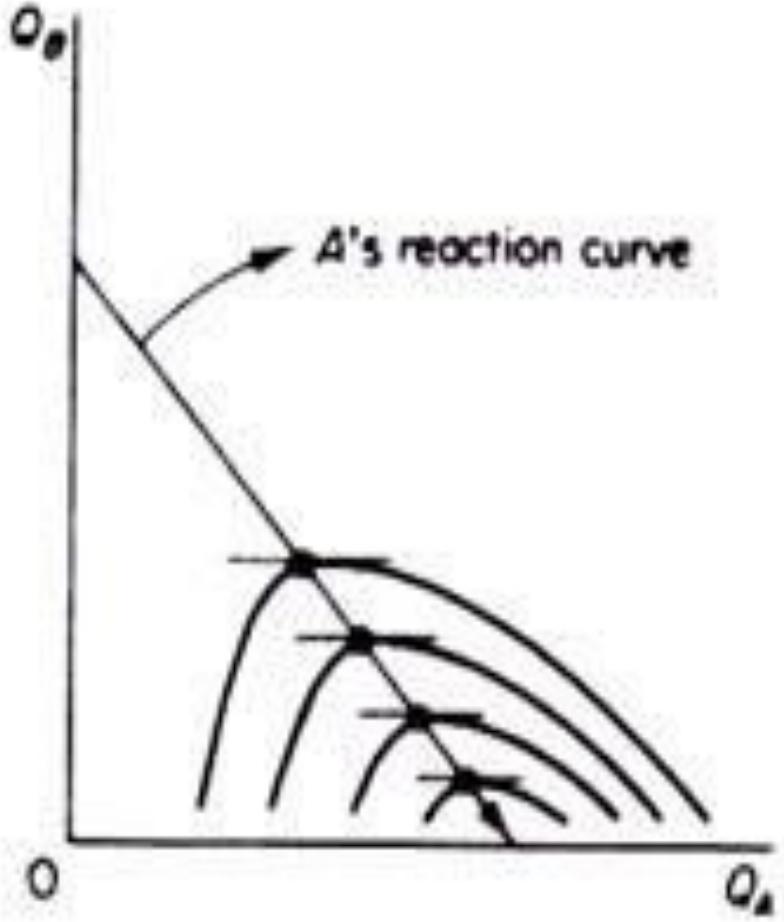


Figure 9.2 Isoprofit map of firm *A*

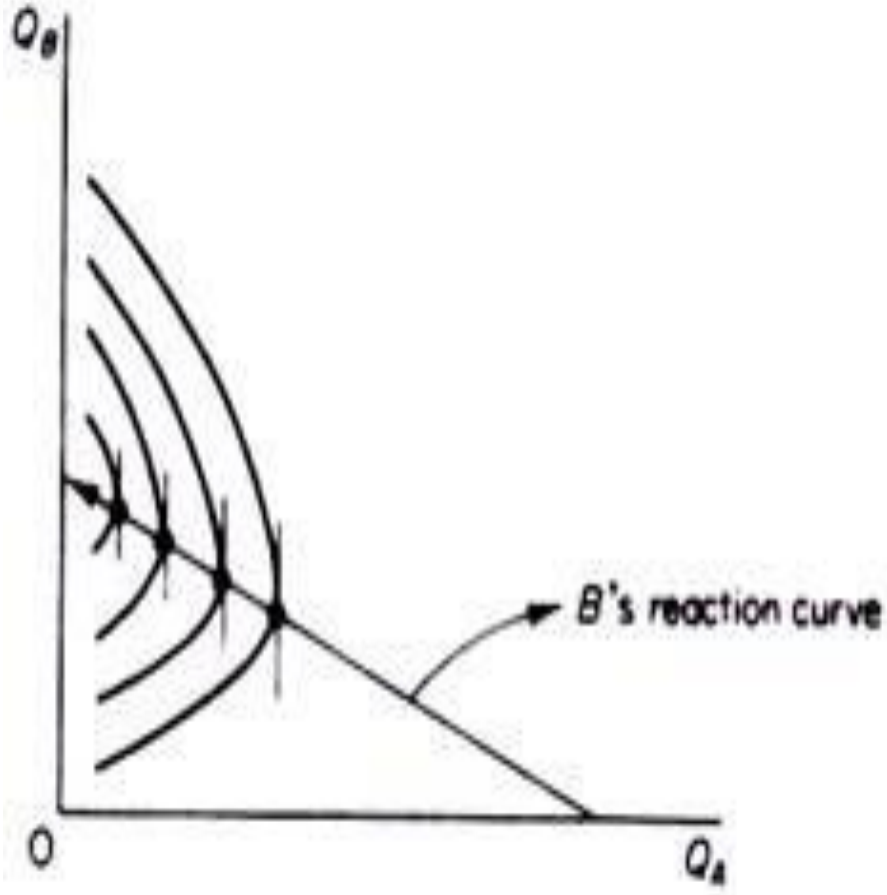


Figure 9.3 Isoprofit map of firm *B*

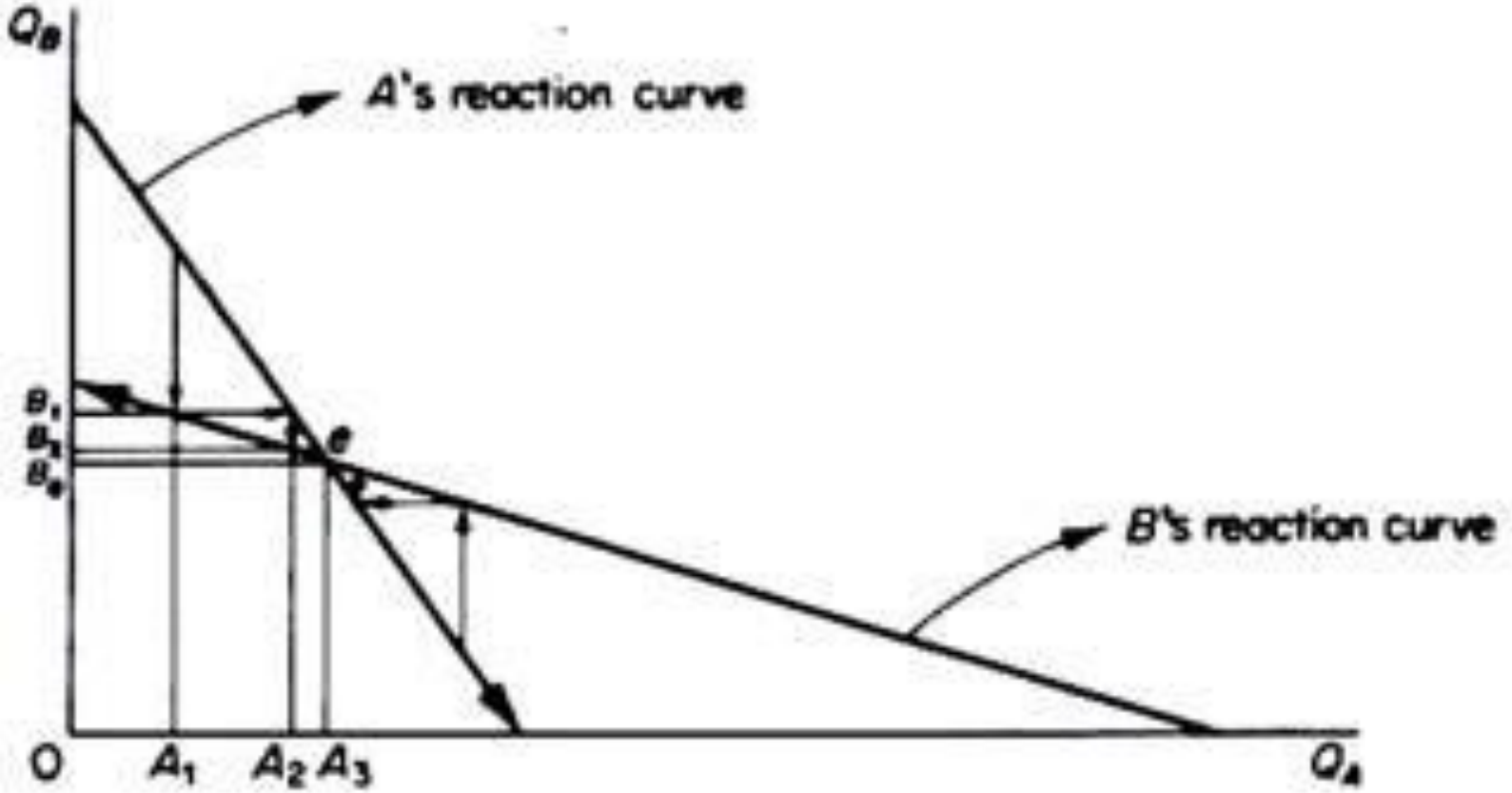
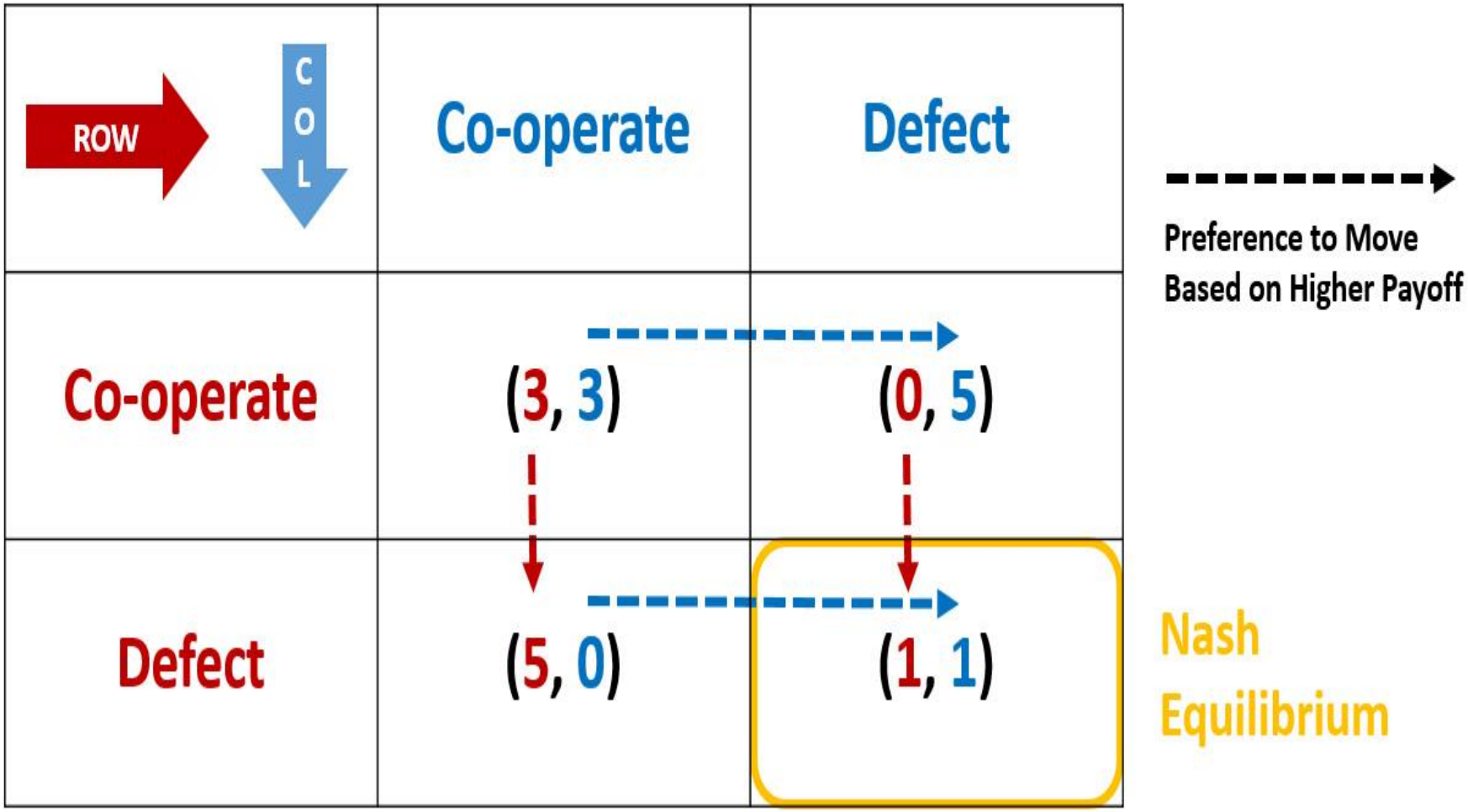


Figure 9.8

Prisoner's Dilemma – Payoff Matrix



Example of Prisoner's Dilemma

- One such example is the tragedy of the commons. It may be in everyone's collective advantage to conserve and reinvest in the propagation of a common pool natural resource in order to be able to continue consuming it.
- But each individual always has an incentive to instead consume as much as possible as quickly as possible, which then depletes the resource.
- Finding some way to co-operate would clearly make everyone better off here.

Example of Prisoner's Dilemma

- On the other hand, the behavior of cartels can be also be considered a prisoner's dilemma. All members of a cartel can collectively enrich themselves by restricting output to keep the price that each receives high enough to capture economic rents from consumers.
- But each cartel member individually has an incentive to cheat on the cartel and increase output to also capture rents away from the other cartel members.
- In terms of the welfare of the overall society that the cartel operates in, this is an example of how a prisoner's dilemma that breaks the cartel down can sometimes actually make society better off as a whole.

Example of Prisoner's Dilemma

	Firm B		
Firm A		High Production	Low Production
	High Production	(1600, 1600)	(2000, 1500)
	Low Production	(1500, 2000)	(1800, 1800)

Dominant Strategy

- A **strategy** is dominant if, regardless of what any other players do, the strategy earns a player a larger **payoff** than any other.
- Hence, a strategy is dominant if it is always better than any other strategy, for any profile of other players' actions.
- Depending on whether "better" is defined with weak or strict inequalities, the strategy is termed **strictly dominant** or **weakly dominant**.
- If one strategy is dominant, than all others are **dominated**. For example, in the **prisoner's dilemma**, each player has a dominant strategy.

Dominant Strategy

	Firm B		
Firm A		To Advertize	Not to Advertize
	To Advertize	(4000, 3000)	(5000, 1000)
	Not to Advertize	(2000, 5000)	(3000, 2000)

Nash Equilibrium

- Nash equilibrium is named after its inventor, John Nash, an American mathematician. It is considered one of the most important concepts of game theory.
- It attempts to determine mathematically and logically the actions that participants of a game should take to secure the best outcomes for themselves.
- It's a situation in which each player chooses an optimal strategy, given the strategy chosen by the other player.

Nash Equilibrium

- It’s where the optimal outcome of a game is one where no player has an incentive to deviate from his chosen strategy after considering an opponent's choice.

Nash Equilibrium: Stoplight Game

		Car B	
		To Go	**To Stop**
Car A	**To Go**	**(-5, -5)**	**(1,0)**
	To Stop	**(0,1)**	**(-1,-1)**