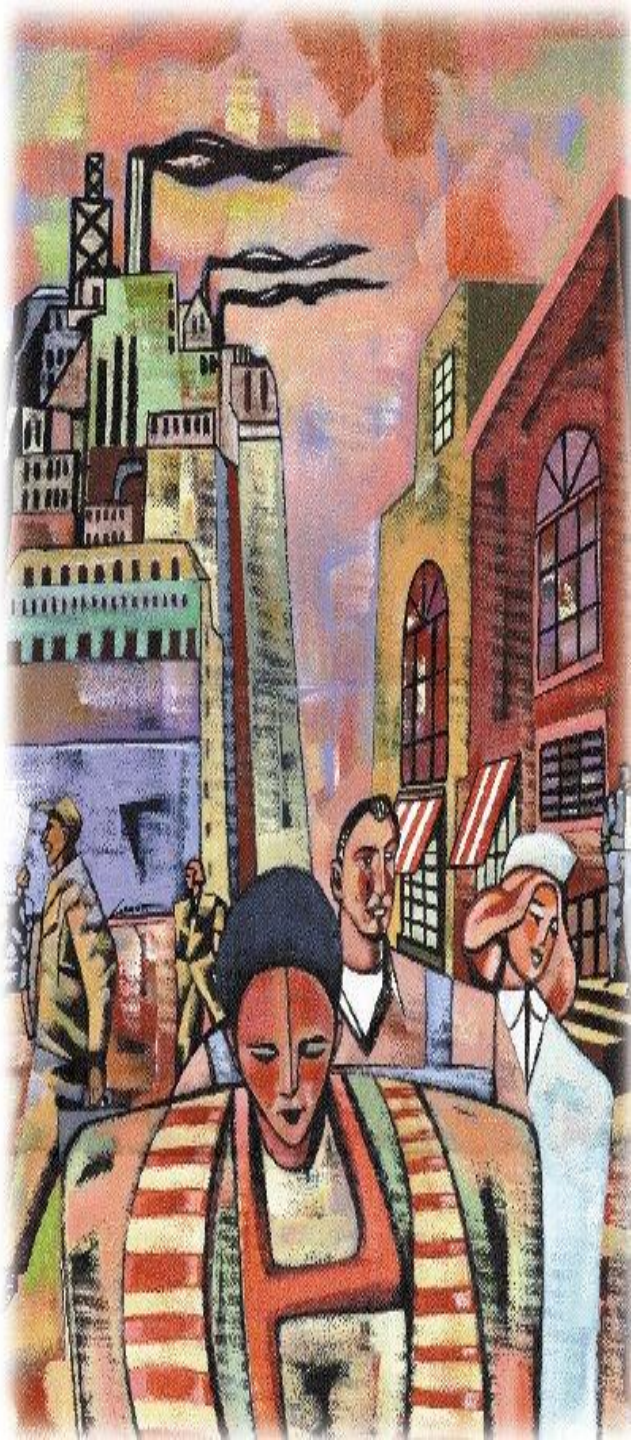


Oligopoly

Chapter 17

Imperfect Competition

Imperfect competition refers to those market structures that fall between perfect competition and pure monopoly.

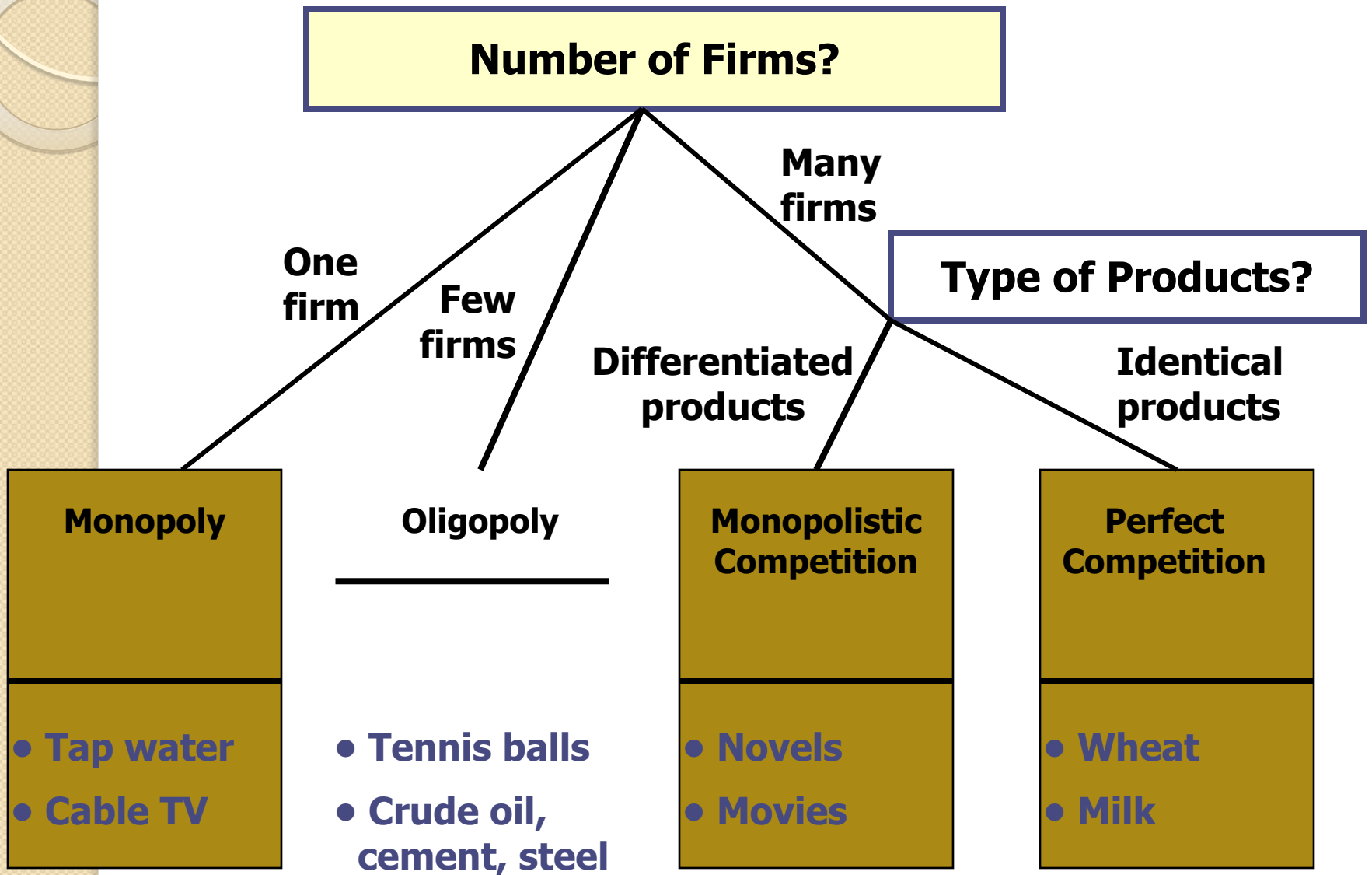
Imperfect Competition

Imperfect competition includes industries in which firms have competitors but do not face so much competition that they are price takers.

Types of Imperfectly Competitive Markets

- Oligopoly
  - Only a *few sellers*, each offering a similar or identical product to the others.
- Monopolistic Competition
  - *Many firms* selling products that are similar but not identical.

The Four Types of Market Structure



Markets With Only a Few Sellers

Because of the few sellers, the key feature of oligopoly is the tension between cooperation and self-interest.

Characteristics of an Oligopoly Market

- Few sellers offering similar or identical products
- Interdependent firms
- Best off cooperating and acting like a monopolist by producing a small quantity of output and charging a price above marginal cost

A Duopoly Example

A duopoly is an oligopoly with only two members. It is the simplest type of oligopoly.

A Duopoly Example: Demand Schedule for Water

Quantity	Price	Total Revenue
0	$120	$ 0
10	110	1,100
20	100	2,000
30	90	2,700
40	80	3,200
50	70	3,500
60	60	3,600
70	50	3,500
80	40	3,200
90	30	2,700
100	20	2,000
110	10	1,100
120	0	0

A Duopoly Example: Price and Quantity Supplied

The price of water in a perfectly competitive market would be driven to where the marginal cost is zero:

$$P = MC = \$0$$

$$Q = 120 \text{ gallons}$$

- The price and quantity in a monopoly market would be where total profit is maximized:

$$P = \$60$$

$$Q = 60 \text{ gallons}$$

A Duopoly Example: Price and Quantity Supplied

- The socially efficient quantity of water is 120 gallons, but a monopolist would produce only 60 gallons of water.
- So what outcome then could be expected from duopolists?

Competition, Monopolies, and Cartels

- The duopolists may agree on a monopoly outcome.
  - Collusion
    - The two firms may agree on the quantity to produce and the price to charge.
  - Cartel
    - The two firms may join together and act in unison.

Competition, Monopolies, and Cartels

Although oligopolists would like to form cartels and earn monopoly profits, often that is not possible. Antitrust laws prohibit explicit agreements among oligopolists as a matter of public policy.

The Equilibrium for an Oligopoly

A Nash equilibrium is a situation in which economic actors interacting with one another each choose their best strategy given the strategies that all the others have chosen.

The Equilibrium for an Oligopoly

When firms in an oligopoly individually choose production to maximize profit, they produce quantity of output greater than the level produced by monopoly and less than the level produced by competition.

The Equilibrium for an Oligopoly

The oligopoly price is less than the monopoly price but greater than the competitive price (which equals marginal cost).

Summary of Equilibrium for an Oligopoly

- Possible outcome if oligopoly firms pursue their own self-interests:
  - Joint output is greater than the monopoly quantity but less than the competitive industry quantity.
  - Market prices are lower than monopoly price but greater than competitive price.
  - Total profits are less than the monopoly profit.

A Duopoly Example: Demand Schedule for Water

Quantity	Price	Total Revenue
0	$120	$ 0
10	110	1,100
20	100	2,000
30	90	2,700
40	80	3,200
50	70	3,500
60	60	3,600
70	50	3,500
80	40	3,200
90	30	2,700
100	20	2,000
110	10	1,100
120	0	0

How the Size of an Oligopoly Affects the Market Outcome

- How increasing the number of sellers affects the price and quantity:
  - The output effect: Because price is above marginal cost, selling more at the going price raises profits.
  - The price effect: Raising production lowers the price and the profit per unit on all units sold.

How the Size of an Oligopoly Affects the Market Outcome

- As the number of sellers in an oligopoly grows larger, an oligopolistic market looks more and more like a competitive market.
- The price approaches marginal cost, and the quantity produced approaches the socially efficient level.

Game Theory and the Economics of Cooperation

- Game theory is the study of how people behave in strategic situations.
- Strategic decisions are those in which each person, in deciding what actions to take, must consider how others might respond to that action.

Game Theory and the Economics of Cooperation

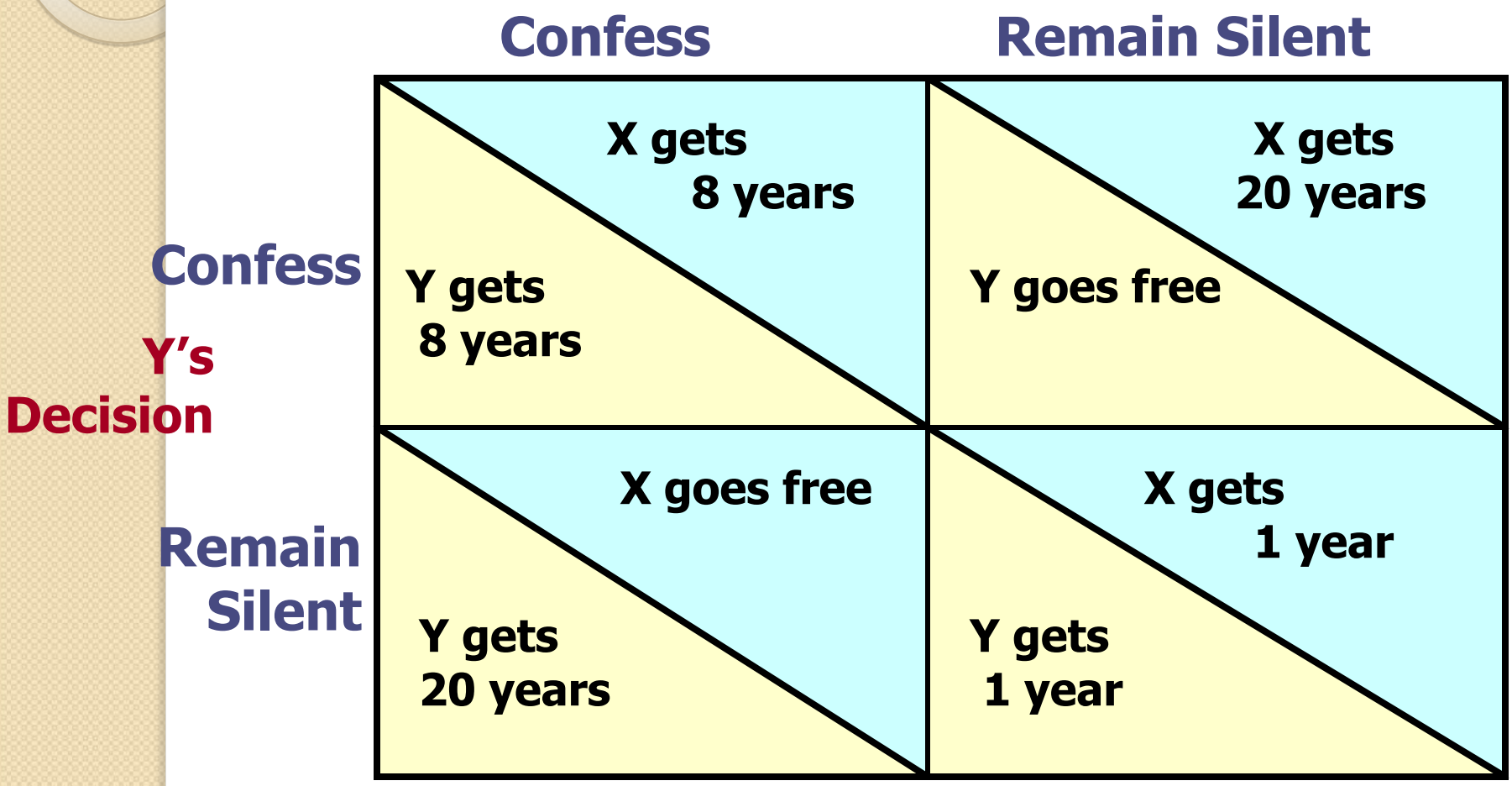
- Because the number of firms in an oligopolistic market is small, each firm must act strategically.
- Each firm knows that its profit depends not only on how much it produced but also on how much the other firms produce.

The Prisoners' Dilemma

The prisoners' dilemma provides insight into the difficulty in maintaining cooperation.

Often people (firms) fail to cooperate with one another even when cooperation would make them better off.

The Prisoners' Dilemma



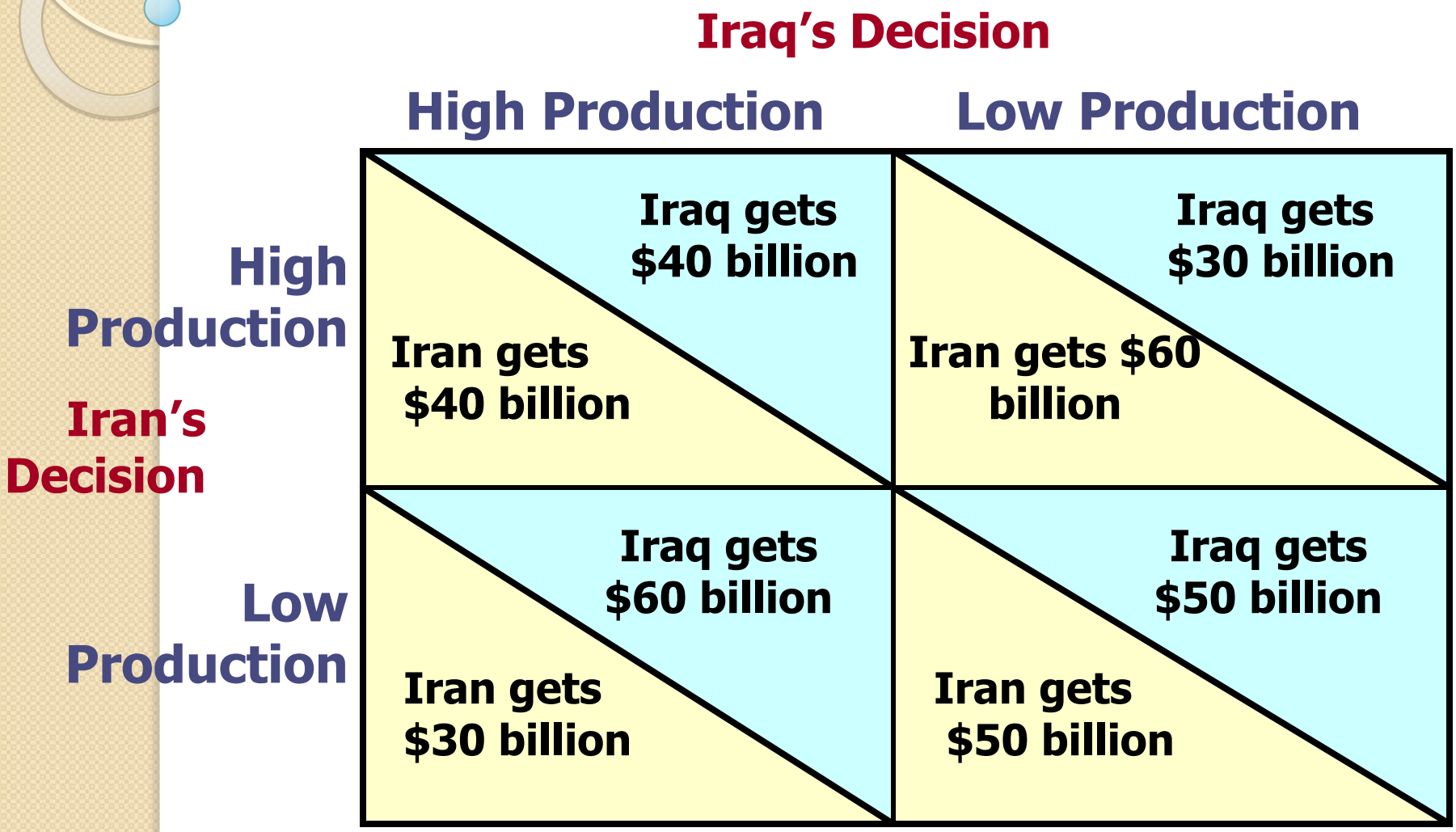
The Prisoners' Dilemma

The dominant strategy is the best strategy for a player to follow regardless of the strategies pursued by other players.

The Prisoners' Dilemma

Cooperation is difficult to maintain, because cooperation is not in the best interest of the individual player.

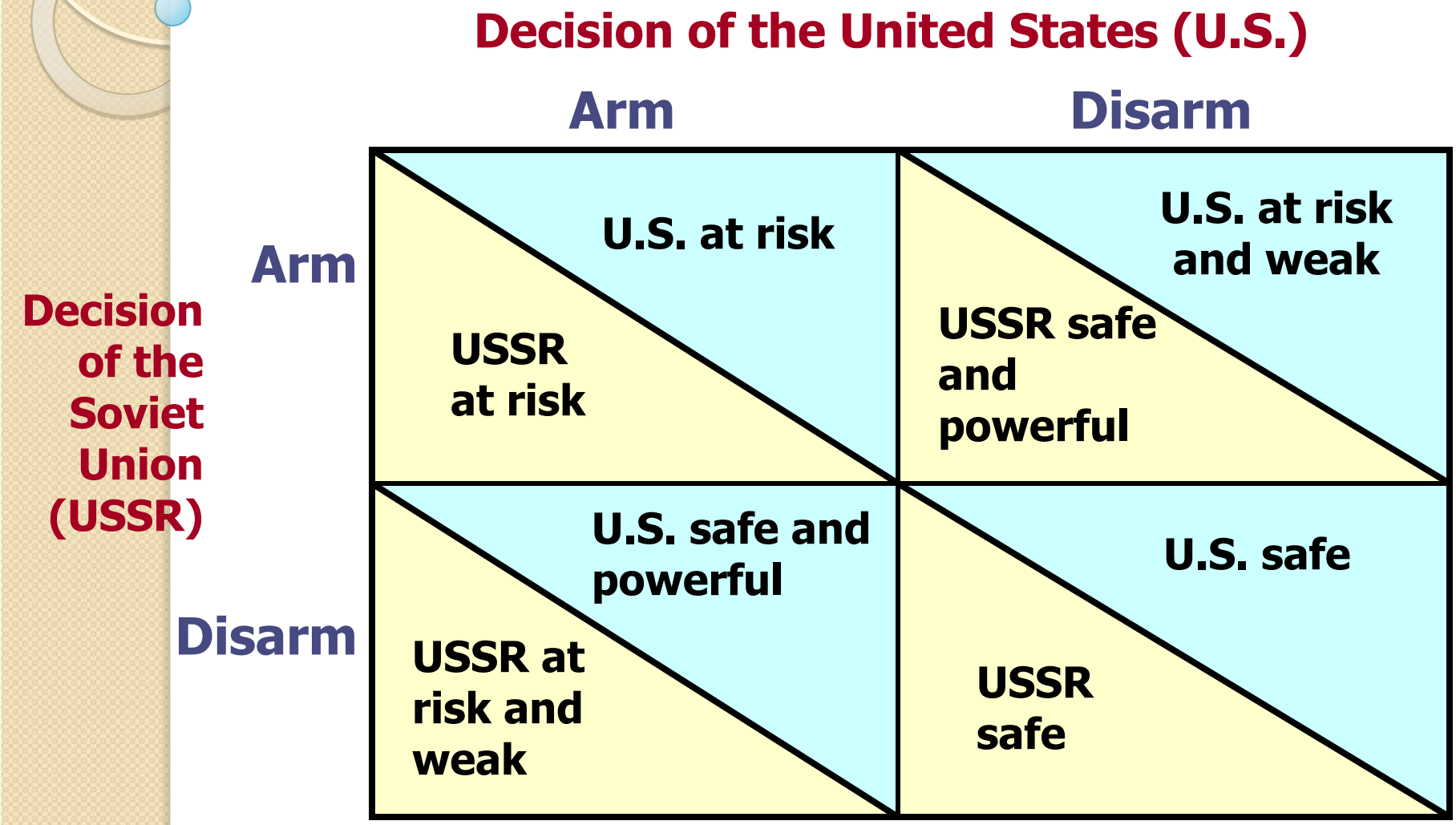
Oligopolies as a Prisoners' Dilemma



Oligopolies as a Prisoners' Dilemma

Self-interest makes it difficult for the oligopoly to maintain a cooperative outcome with low production, high prices, and monopoly profits.

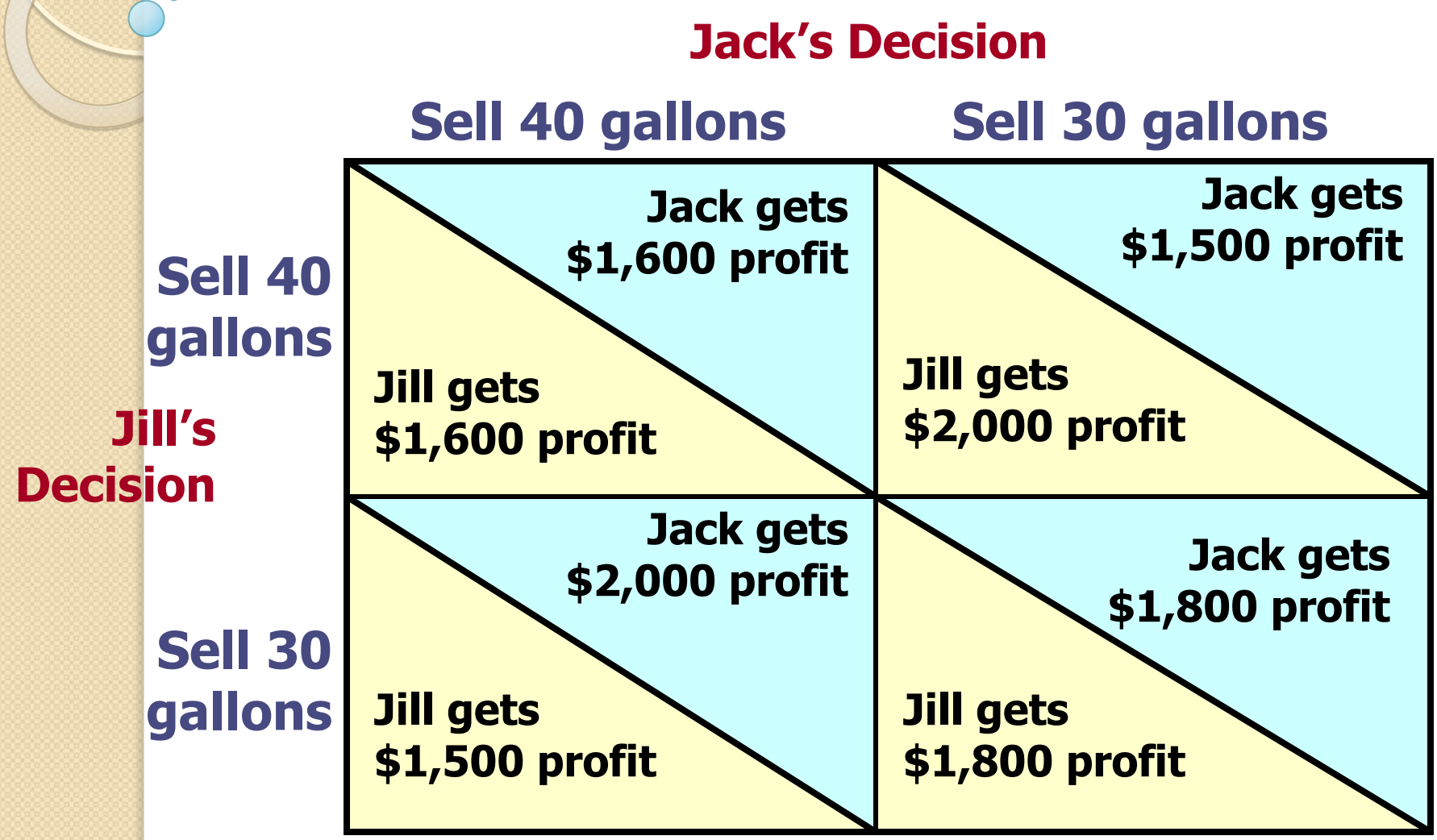
An Arms-Race Game



Why People Sometimes Cooperate

Firms that care about future profits will cooperate in repeated games rather than cheating in a single game to achieve a one-time gain.

Jack and Jill's Oligopoly Game

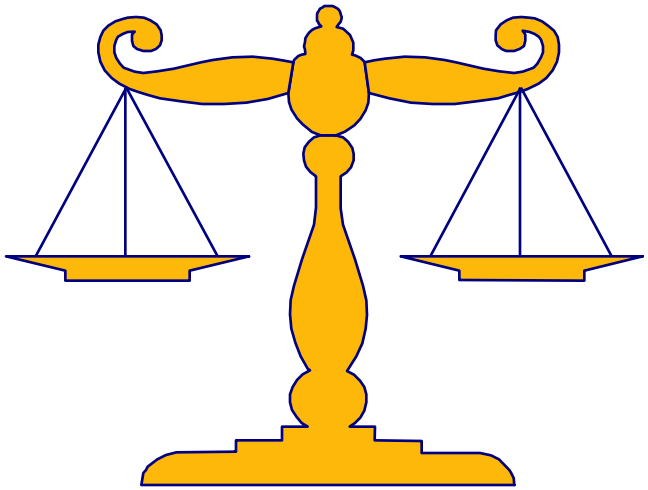


Public Policy Toward Oligopolies

Cooperation among oligopolists is undesirable from the standpoint of society as a whole because it leads to *production that is too low* and *prices that are too high.*

Restraint of Trade and the Antitrust Laws

- Antitrust laws make it illegal to restrain trade or attempt to monopolize a market.
  - Sherman Antitrust Act of 1890
  - Clayton Act of 1914



Summary

- Oligopolists maximize their total profits by forming a cartel and acting like a monopolist.
- If oligopolists make decisions about production levels individually, the result is a greater quantity and a lower price than under the monopoly outcome.

Summary

- The prisoners' dilemma shows that self-interest can prevent people from maintaining cooperation, even when cooperation is in their mutual self-interest.
- The logic of the prisoners' dilemma applies in many situations, including oligopolies.

Summary

- Policymakers use the antitrust laws to prevent oligopolies from engaging in behavior that reduces competition.