Oligopolies Part II

It's called an oligopoly. It's not a regular market. It's a market in which they control the prices and they've been doing it for years.

Richard Miller

Oligopoly Behavior

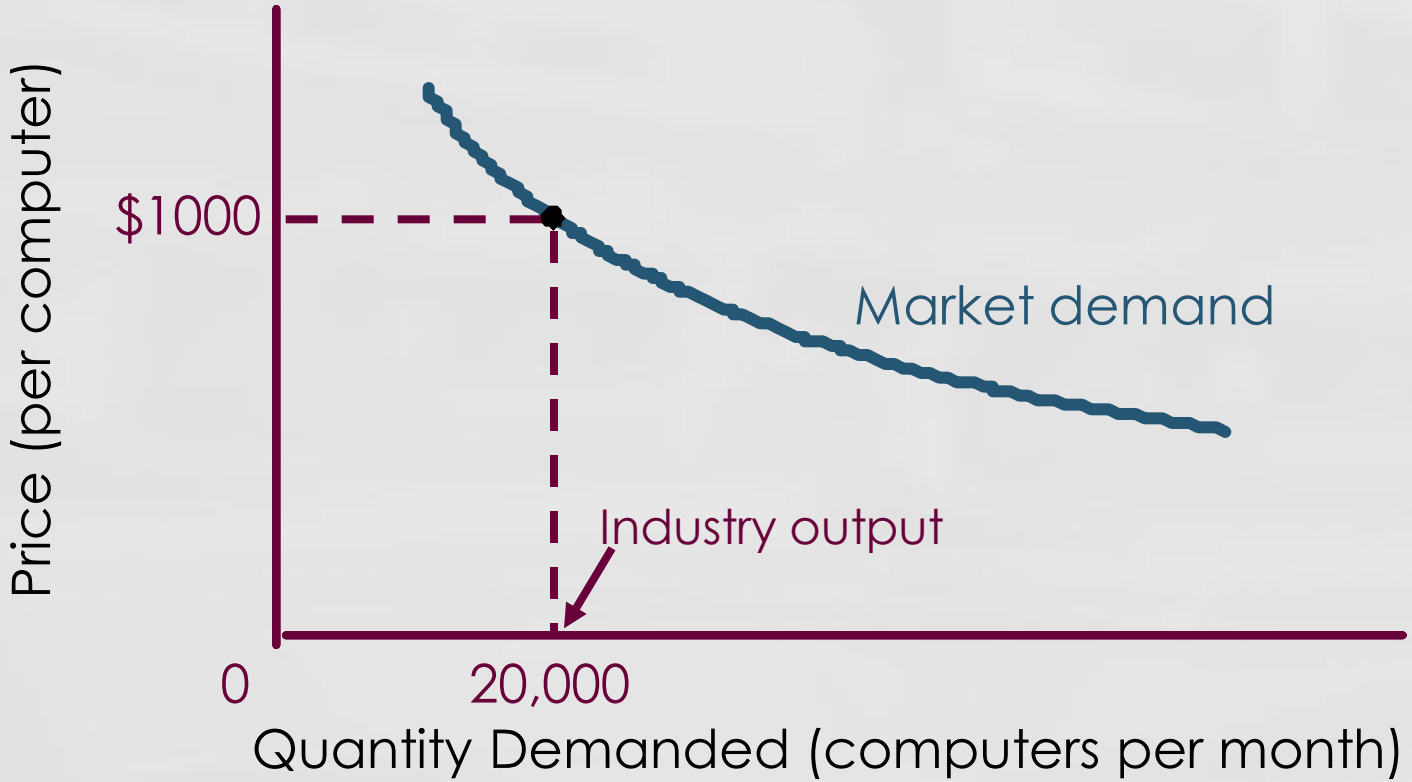
Market structure affects market behavior and outcomes.

As an example, assume that an oligopoly market for computers has three firms.

Initial Equilibrium

- Initial conditions and market shares of each firm are described in the following slides.
  - market share -- the percentage of total market output produced by a single firm

Chart: Initial Conditions in Computer Market



Increased Sales at the Prevailing Market Price

In an oligopoly, increases in the market share of one firm necessarily reduce the shares of the remaining firms.

Increased sales on the part of one firm will be noticed immediately by the other firms.

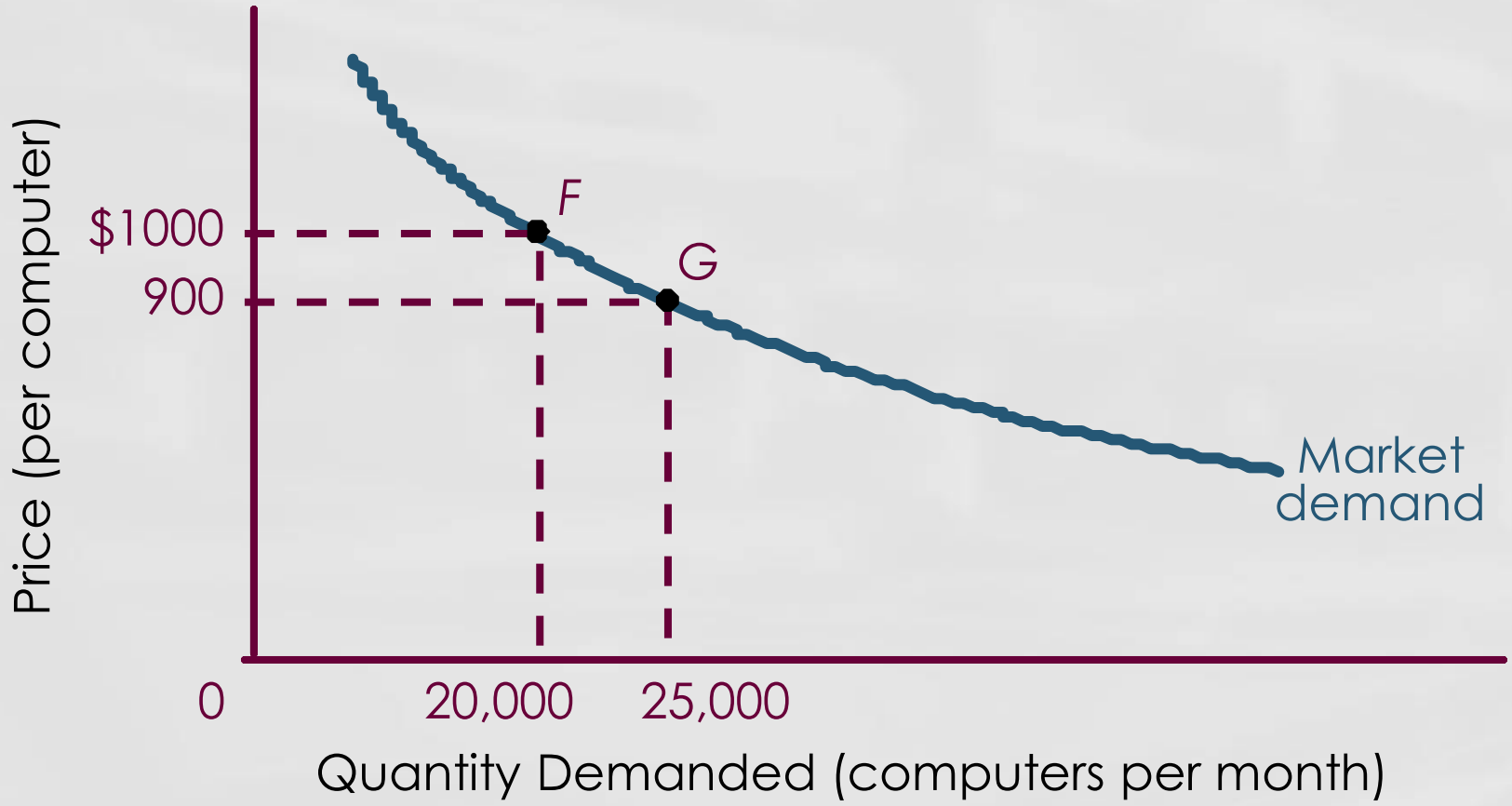
Table: Initial Market Shares of Microcomputer Producers

Producer	Output	Market Share
Universal Electronics	8,000	40.0%
World Computers	6,500	32.5%
International Semiconductor	5,500	27.5%
Total industry output	20,000	100.0%

Increased Sales at Reduced Prices

- Lowering prices may expand total market sales and increase the sales of an individual firm without affecting the sales of its competitors.
- There simply isn't any way that a firm can do so without causing alarms to go off in the industry.

Chart: Rivalry for Market Shares



Retaliation

- Firms respond to aggressive marketing by competitors.
  - Step up marketing efforts.
  - Cut prices on their product(s).

Retaliation

- An attempt by one firm to increase its market share by cutting prices will lead to a general reduction in the market price.
- This is why oligopolists avoid price competition and instead pursue nonprice competition.

Non-Price Competition

- Non-price competition is a consistent feature of the competitive strategies of oligopolistic firms. Examples of non-price competition include:
  - free deliveries and installation
  - extended warranties for consumers and credit facilities
  - longer opening hours (e.g. supermarkets and gas stations)
  - branding of products
  - heavy spending on advertising and marketing
  - extensive after-sales service
  - expansion into new markets
  - diversification of the product range

Product Differentiation

- One way firms market their products is through product differentiation.
  - Product differentiation – features that make one product appear different from competing products in the same market

Negative Effects of Advertising

- Advertising can be manipulative.
- Advertising contains misleading claims that confuse consumers.
- Consumers may pay high prices for a good while forgoing a better, lower priced, unadvertised version of the product .
- Advertising costs mean higher product prices.

The Kinked Demand Curve

Close interdependence – and the limitations it imposes on price and output decisions – is a characteristic of oligopoly.

Rivals' Response to Price Reductions

- The degree to which sales increase when the price is reduced depends on the response of rival firms.
- We expect firms to match any price reductions by rivals.

Rivals' Response to Price Increases

Rival firms may not match price increases in order to gain market share.

The Kinked Demand Curve Confronting an Oligopolist

- The shape of the demand curve facing a firm in an oligopoly market depends on how its rivals responded to a change in the price of its own output.
- The demand curve will be kinked if rival firms match price reductions but not price increases.

Kinked Oligopoly Demand Curve

- price *cuts* lead to everyone following
  - highly inelastic
- price *increases*, no one follows
  - highly elastic
- Initial position is at the junction of two demand curves of different relative elasticity, each reflecting a different assumption about how rivals are expected to react to a change in price.

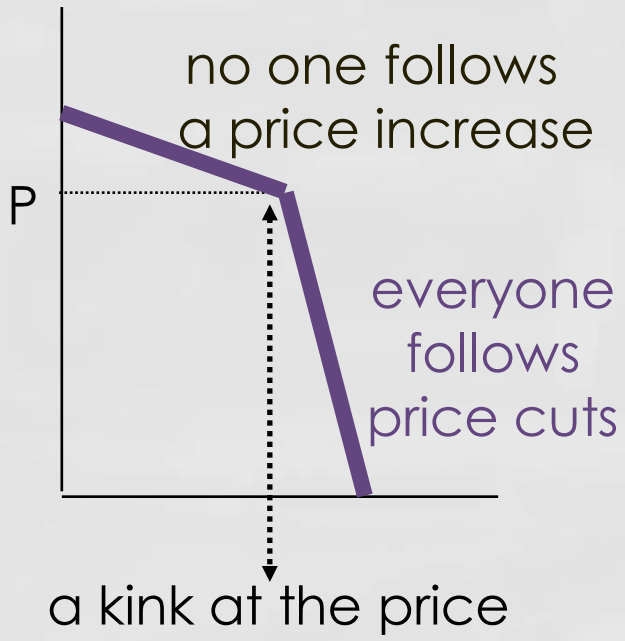
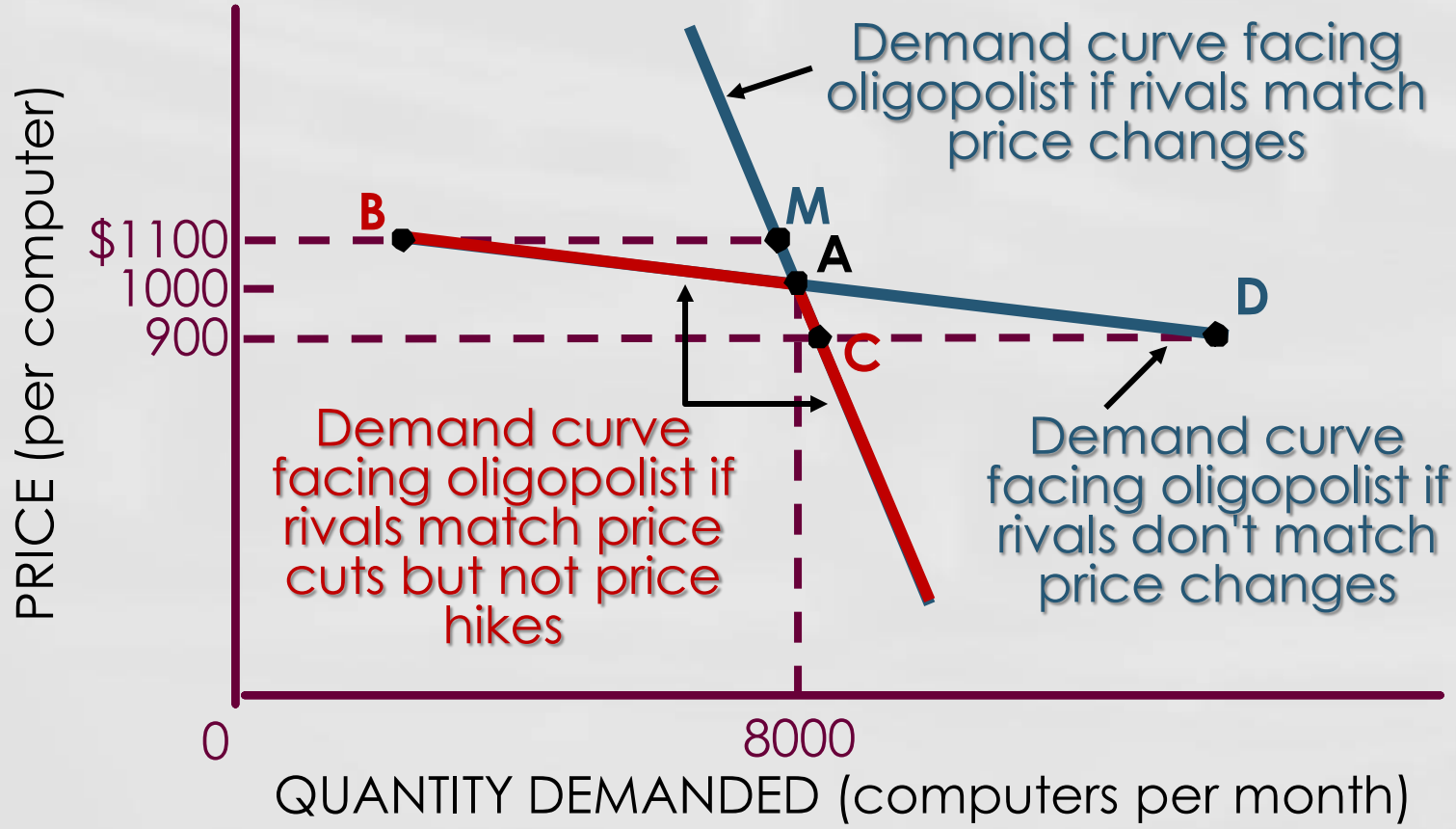
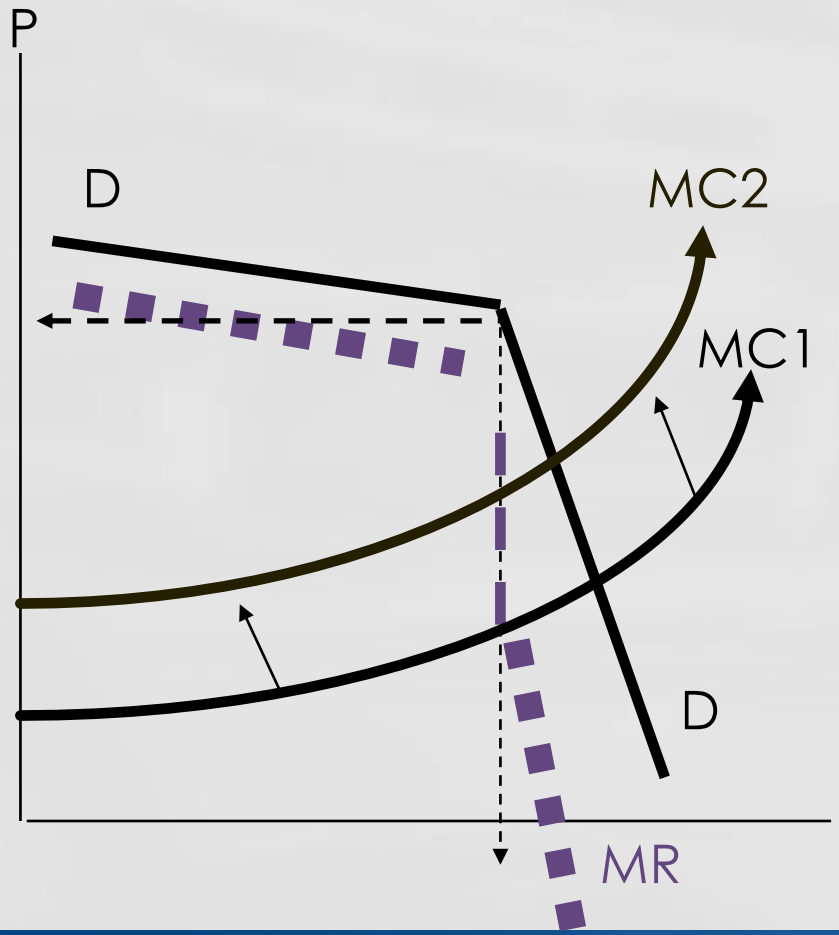


Chart: The Kinked Demand Curve Confronting an Oligopolist



If the firm's expectations are correct, revenue will be lost whether the price is raised or cut. The best policy may be to leave the price unchanged.

A Kink Leads to Breaks in the MR Curve



- Although MC rises, the optimal price remains constant.
- Expect to find price rigidity in markets with kinked demand.

Game Theory

Since oligopolies are interdependent, game theory can be a useful tool in analyzing the strategic behavior of firms. Analyzing strategic behavior is useful in sports, politics, business, war and even dating. In game theory, the payoff or reward to the firm depends on its actions as well as the actions of the others.

Game Theory Example

Imagine you've been taken to New York with a friend and told that there are two people in NYC who are looking for you, but you don't know who they are or what they look like.

How would you go about finding them? Where would you go and at what time would you meet?

This is an example of game theory -- where you are trying to make the best choice based on what you think will be the actions of others.

Game Theory Example in Video

The NYC experiment on the previous slide was actually tried with a group of people by ABC Primetime. If you're interested, you can view the video using the link below. You may find it a very useful resource for understanding some of the basic ideas of game theory.

ABC Primetime (March 16, 2006) video on game theory

You can also read a transcript of the video at ABC News / Primetime: Mission Impossible: In Search of Strangers in New York City.

Game Theory

- In an oligopoly market, each firm has to consider the potential responses of rivals when formulating price or output strategies.
- The payoff to a firm's price cut depends on how its rivals respond.
- Game theory is the study of decision making in situations where strategic interaction (moves and countermoves) between rivals occurs.

Game Theory

Remember: The best way to play depends on your opponent. (Think about the decision on whether to pass or run in a football game.)

The media is full of examples of game theory. Watch the following clip from The Princess Bride:

The Princess Bride: Never go in against a Sicilian when death is on the line! (About 5 minutes)

GameTheory.net has additional examples of game theory in film.

Game Theory

Game theory is an extremely powerful tool that can be used to analyze and predict the behavior of others when there are few parties involved and their payoffs are interdependent.

It is particularly of interest when examining the behavior of oligopolies and their decisions to price, advertise and produce.

Game Theory and Oligopolies

- Each firm is uncertain about its rival's behavior.
- The collective interests of the oligopoly are protected if no one cuts the market price.
- But an individual firm could lose if it holds the line on price when rivals reduce price.
- Where there is a small number of competitors, a firm's payoff on any choice cannot be known in advance … it depends also on what choices others make.

The Payoff Matrix

- The payoff to an oligopolist's price cut depends on how its rivals respond.
- The payoff matrix:
  - Shows outcomes resulting from different possible decisions
  - Probabilities can be attached to the outcomes.

continued in
Oligopoly Part III