Oligopolies Part I

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

Market Structure

- We classify firms into specific market structures based on the number and relative size of firms in an industry.
  - market structure – the number and relative size of firms in an industry
- Market structures are characterized by:
  - the number of firms in the market
  - entry and exit barriers
  - market power (price control) of individual firms
  - kind of product or service being sold

Table: Characteristics of Market Structures

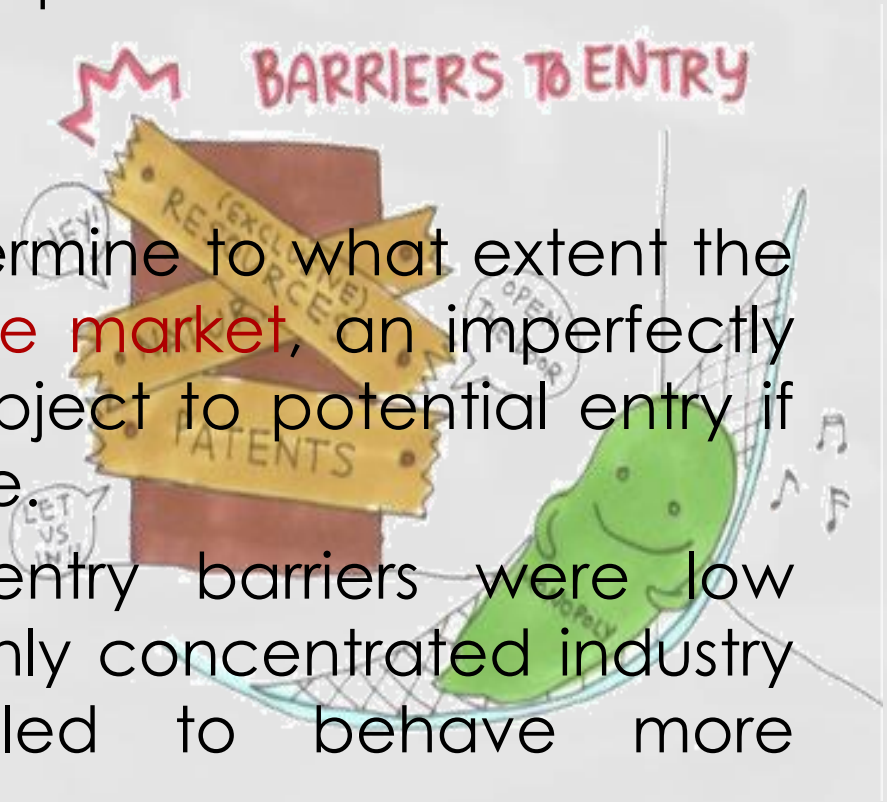
Characteristics	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
1. Number of Firms	very large number	many	few	one
2. Entry Barriers	none	low	high	high
3. Market Power (price control)	none	some	substantial	substantial
4. Product	standardized	differentiated	standardized or differentiated	unique

Market Power

- A firm's ability to profitably raise the market price of its good or service by influencing the supply, demand or both is its market power.
  - A company with market power is able to affect price to its benefit.
- In perfectly competitive markets, firms have no market power.
- In imperfectly competitive markets, firms possess some degree of market power but the amount depends on the market structure in which a firm operates.

Determinants of Market Power

- The determinants of market power include:
  - number of producers
  - size of each firm
  - barriers to entry -- Determine to what extent the market is a contestable market, an imperfectly competitive market subject to potential entry if prices or profits increase.
    - contestability - If entry barriers were low enough, even a highly concentrated industry might be compelled to behave more competitively.
  - availability of substitute goods



Determinants of Market Power

- Market power *increases*
  - if there are fewer firms in the market (less competition)
  - if there are larger firms in the market (each has a larger share of the market)
  - if there are high entry barriers (lowers the possibility of future competition)
  - if there are fewer substitutes for their products (less competition)

Firm Size

Keep in mind…

- Market power isn't necessarily associated with absolute firm size.
- A small firm could possess a lot of power in a relatively small market.

Measuring Market Power

- With only a few firms in a market, firms often have an incentive to collude and act like a monopoly.
- The government measures the amount of concentration that exists in a market or that would exist if a merger were to take place.
- The two common measures are the *four-firm concentration ratio* and the *Hefindahl-Hirschman Index (HHI)*.

The Concentration Ratio

- The standard measure of market power is the concentration ratio.
- The concentration ratio is a measure of market power that relates the size of firms to the size of the market, the proportion of total industry output produced by the largest firms (usually the four largest).

The Four-Firm Concentration Ratio

- The four-firm concentration ratio (CR_4) sums the market share of the four largest firms in an industry based on output.
- An industry in pure competition would have a very low concentration ratio.
- Industries in monopolistic competition market typically have a concentration ratio less than 40.
- Oligopolies have a ratio greater than 40.

The Herfindahl-Hirschman Index

- The Herfindahl-Hirschman Index (HHI) takes the percent of the market share of each firm, squares their values and sums them.

$$HHI = \sum_{i=1}^{n} \left(\begin{matrix} share\ of \\ firm\ i \end{matrix} \right)^2$$

$$HHI = \sum \left(\begin{matrix} share\ of \\ firm\ 1 \end{matrix} \right)^2 + \left(\begin{matrix} share\ of \\ firm\ 2 \end{matrix} \right)^2 + \bullet \bullet \bullet \left(\begin{matrix} share\ of \\ firm\ n \end{matrix} \right)^2$$

- The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size.

The Herfindahl-Hirschman Index

- The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.
- Markets in which the HHI is between 1000 and 1800 points are considered to be moderately concentrated.
- Markets in which the HHI is in excess of 1800 points are considered to be concentrated.

The Herfindahl-Hirschman Index

- Transactions that increase the HHI by more than 100 points in a concentrated market presumably raise anti-trust concerns.
- However, the FTC now also looks to see if a proposed merger will allow for greater efficiencies and lower costs.

Diagram: CR_4 and HHI Scales

CR_4

0 **50** **80** **100**

perfect competition | **low** | **medium concentration** | **high** | monopoly

HHI

0 **100**(0.01) **1500**(0.15) **2500**(0.25)

perfect competition | **low** | **medium concentration** | **high** | monopoly

Table: CR_4 and HHI Examples

Sector	CR_4	HHI
food manufacturing	16.8	118.7
malt manufacturing	91.4	2192.4
breakfast cereal manufacturing	52.1	2999.6
motor vehicle manufacturing	81.2	2323.5
metal household furniture manufacturing	27.6	308.2
breweries	90.8	not disclosed

Measurement Problems

- Many smaller firms *acting in unison* can achieve market power.
- Do not convey the extent to which market power may be concentrated in a *local* market.
- Fail to account for market competition in *foreign* competition.
- The more specific the *industry definition*, the greater the market concentration. For example, the food manufacturing industry as a whole has a low level of market concentration. However, there is significant concentration in certain subsectors such as breakfast cereal. (See previous slide.)

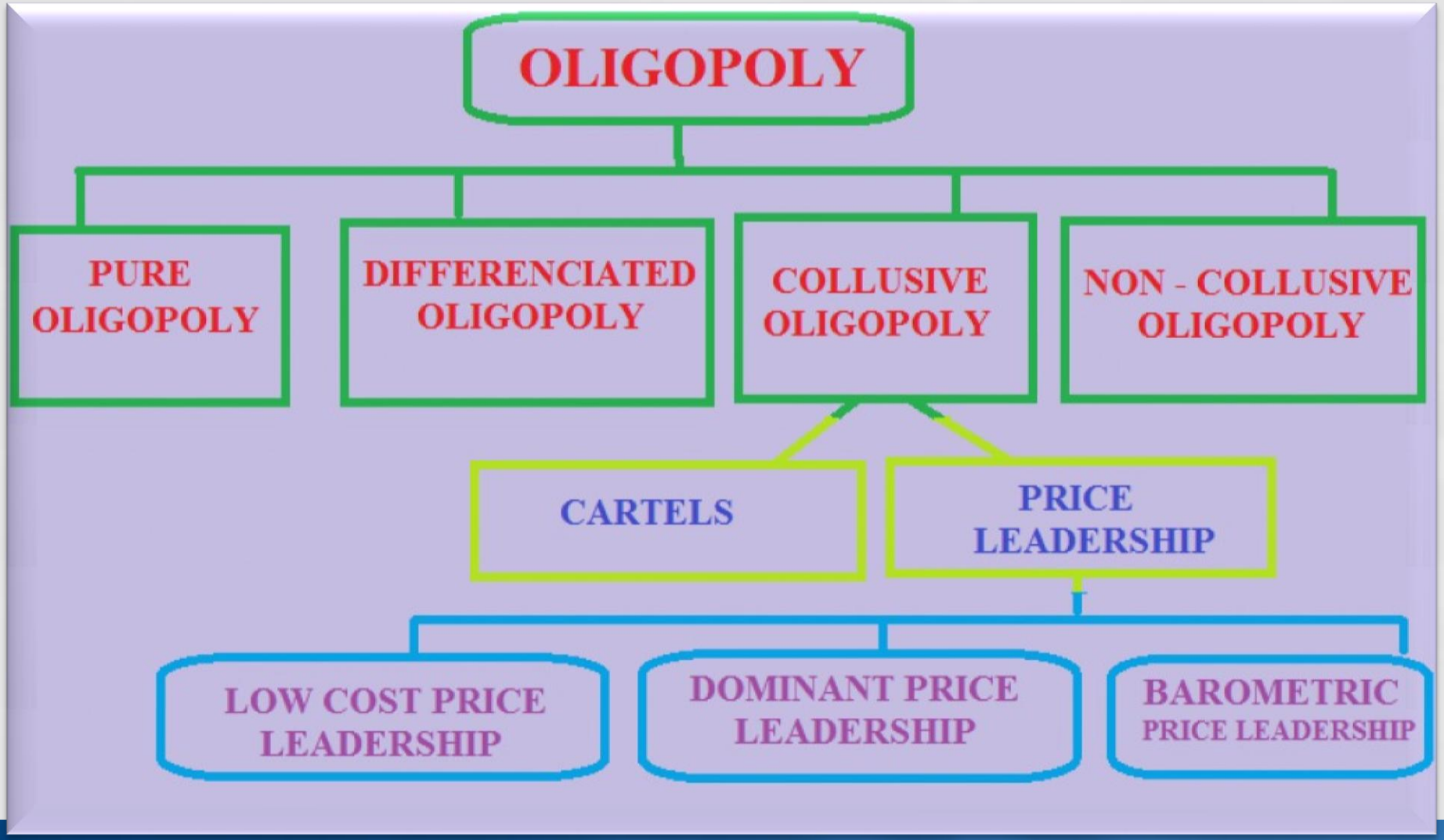
Oligopolies

An **oligopoly** is a market structure in which a few large firms produce all or most of the market supply of a particular good or service.

Types of Oligopolies

- pure oligopoly -- all the firms produce homogenous products, products are perfectly substitutable (some produce)
- differentiated oligopoly -- the products have some kind of difference but the products are substitutable (laptops)
- collusive oligopoly – firms are functioning on the basis of an agreement between them such that price, market share, etc are influenced (OPEC)
- non-collusive oligopoly – no agreements between firms with each making its own policy decisions (auto industry)

Types of Oligopolies



Characteristics of an Oligopoly Market

1. A few large firms dominate the market.
2. Has an extremely high level of competition but between very few firms.
3. Mutual Interdependence
   a. Market power is substantial but interdependent.
   b. Firms interact among themselves.
   c. When one firm changes a price, it must take into account how other firms in the industry will respond.

Characteristics of an Oligopoly Market

4. Non-price competition leads to higher prices for consumers.
5. Products can be standardized (steel) or differentiated (automobiles).
6. Product Branding – For more, review *Monopolistic Competition* presentation.
7. There are usually significant barriers to entry, often due to the cost structure of the industry.
8. Price-fixing can lead to very high prices.
9. Price wars caused by competitors copying prices can (rarely) lead to very low prices.

Characteristics of an Oligopoly Market

10. Overt Collusion
    a. Firms may collude to set price or output levels and act like a monopoly to maximize joint profits.
    b. May set prices, determine output levels or divide market into geographic monopolies.
    c. May be formal and explicit as with the Organization of Petroleum Exporting Countries (OPEC), where members formally hold meetings to determine output levels of oil.
11. Covert Collusion - Since collusion is illegal in the US, firms may secretly communicate to set prices and divide up the market.

Characteristics of an Oligopoly Market

12. Price Leadeship - Firms don't illegally collude but are able to signal a desire to raise prices.
    a. In some industries, firms choose to legally collude by following the behavior of a dominant firm.
    b. In the airline industry a carrier might announce a price increase on holiday tickets months in advance, giving other carriers time to also announce price increases.
    c. If other carriers fail to raise prices, the dominant firm will typically recall its price increase, not wanting to charge a higher price than competitors.

Characteristics of an Oligopoly Market

13. Being a leader in an oligopoly market does not mean that you remain the leader for long.
14. This type of market has built-in incentives to cheat.
15. Oligopolies display strategic behavior.
    a. Game theory
    b. Prisoner's dilemma

Oligopoly Market Examples

Internet Oligopoly

- The Internet became accessible to the average person in the mid 1990's
- Today it is dominated by a few very large firms: Google, Facebook, Amazon, Microsoft, Apple
- Not satisfied with just revenues generated in their respective sectors
- Compete for advertising $s
- Compete with their own electronic devices

Google

Microsoft®

Oligopoly Market Examples

Wireless Oligopoly

The AT&T and T-Mobile Merger would eliminate a competitor and leave two wireless giants — AT&T and Verizon — with unprecedented power. The two companies would control nearly 80% of the nation's cellphone market, spelling bad news for consumers across the board.

T-Mobile CEO Philipp Humm testified before a Senate subcommittee that this merger would increase competition and 'lower prices for all customers.' But you can't have more competition with fewer options. It just doesn't add up… Eliminating a competitor from the marketplace certainly doesn't lead to more competition. This merger will ultimately lead to higher prices and fewer choices for all wireless customers.

Oligopoly Market Examples

Most Big Media companies are part of a **pay TV oligopoly** that still has scandalous power to set and raise prices -- mostly by requiring people who want to keep up with the national conversation to pay for dozens of channels that they never watch.

Oligopoly Market Examples

For details on the banking industry and other oligopolies, as well as more details on the preceeding examples, <u>refer to the *Margin Notes* section on oligopolies</u>.

You'll be surprised at what's going on in some of these markets!

continued in
Oligopoly Part II