

Oligopoly

by Sophia Tutorial



WHAT'S COVERED

This tutorial will identify oligopoly as one of the market structures studied in economics, focusing on its definition and main characteristics.

Our discussion breaks down as follows:

1. The Behavior of Firms
2. Oligopoly
3. Characteristics of Oligopoly
 - a. Few Firms
 - b. Barriers to Entry
 - c. Output and Pricing
 - d. Collusion
4. Prisoner's Dilemma
5. Prisoner's Dilemma in Oligopolies
6. Cartels

1. The Behavior of Firms

Beginning with some basics, businesses or firms demand the factors of production, known as inputs, and supply goods and services, or outputs.

The field of economics studies this behavior of firms and, given that not all firms are created equal, how it varies depending on certain characteristics:

- Their size
- Their product
- How many competitors they face
- How easy or difficult it was to get into the business

2. Oligopoly

Let's look at where **oligopoly** falls on the spectrum of competition.

As you can see, oligopoly is closer on the spectrum to monopoly, where one firm dominates the market, selling a one-of-a-kind product, than to perfect competition, where there are many firms selling a homogeneous or identical product.



Oligopoly is defined as an industry market structure characterized by a few firms selling similar products.

TERM TO KNOW

Oligopoly

An industry market structure characterized by a few firms selling similar products

3. Characteristics of Oligopoly

Let's explore the different characteristics of an oligopoly.

3a. Few Firms

An oligopoly does not involve just one firm, but there are fewer than in monopolistic and perfect competition.

So, why don't more firms enter as in monopolistic competition?

Well, in monopolistic competition and perfect competition, if the industry is doing well, there are low barriers to entry so almost anyone can get into the business and start producing.

In oligopoly, there are going to be barriers to entry, which we will cover next.

3b. Barriers to Entry

So, significant barriers to entry are one of the characteristics of this market structure, such as:

- Exclusive access to resources
- Patents

🔗 **EXAMPLE** For example, there are not many major pharmaceutical companies in the U.S., because of these barriers to entry.

- High start-up costs which encourage large-scale production; it will encourage a few large firms to develop because they can spread out those initial upfront costs.

🔗 **EXAMPLE** Examples of industries with high start-up costs are cell phone network providers or cable/digital television providers in a certain area. Because of the expense required to get into those industries and set up a network, it is difficult for anyone else to enter to compete with them.

3c. Output and Pricing

Like all firms, oligopolies set output and price where they maximize profit.

They tend to produce more than monopolies but less than more competitive market structures like perfect competition or monopolistic competition.

Prices are lower than in a monopolies because they do face some competition, but higher than in more competitive market industries.



THINK ABOUT IT

Have you ever felt like you were getting ripped off by a certain company, and that there should be more competition to impact pricing? Even if there are a few companies, if they are all charging similar prices, you may feel that you simply can't seem to get a deal. Generally, this occurs in this market structure--oligopolies.

3d. Collusion

This notion of similar prices goes along with the idea of **collusion**, which is an attempt by firms to agree on prices and the number of units produced.

In oligopolies, this becomes possible because of the small number of firms.

Now, in monopolistic or perfect competition, it is not possible because there are simply too many firms involved and they could never all sit down and agree on anything.

If they could, though, wouldn't that be in their best interests to do so? It would allow them to act as one company and earn monopoly profits.



TERM TO KNOW

Collusion

An attempt by firms to agree on prices and the number of units produced

4. Prisoner's Dilemma

Thankfully for consumers, this collusion does not always work out.

This is due to a phenomenon we call the **Prisoner's Dilemma**, which is a model used to illustrate why collusion breaks down.

Let's explore the classic example of the prisoner's dilemma.

IN CONTEXT

Two prisoners have the option to confess or not confess.

The prosecutor is relying on a confession because he has only enough information to convict both criminals of a lesser, minor offense, which carries a sentence of one year in jail.

Therefore, if both prisoners keep quiet and do not confess, they will only spend one year in jail.

The prisoners are questioned in different cells, without the ability to communicate.

They are told that if one prisoner confesses while the other remains silent, the prisoner confessing will go free and the one remaining silent will serve 20 years in jail.

If both prisoners confess, they will both serve three years in jail.

What will they do in this situation?

Here is what we call a payoff matrix, and it works like this:

- If Prisoner 1 and Prisoner 2 both confess, the $(-3, -3)$ represents them both spending three years in jail or losing three years of freedom.
- If they both *don't* confess, the $(-1, -1)$ means that they both get one year in jail.
- The other cells illustrate what happens if one prisoner confesses and one does not.

Prisoner 2	Prisoner 1	
	Confess	Not Confess
	Confess	Not Confess
Confess	-3, -3	-20, 0
Not Confess	0, -20	-1, -1

So, what would be the best outcome?

Well, the best outcome for both prisoners combined would be if they both agree to not confess.

However, is that going to be the result, considering their inability to communicate?

Prisoner 1 is likely thinking to himself that if his friend confesses, he should also confess--otherwise he will be spending 20 years in jail.

Or, if his friend *doesn't* confess, he could also not confess, and only get one year in jail.

Even so, it may still be in his best interests to confess if his friend doesn't, because then he will go free

In any case, it is in both of their best interests to confess; both have an incentive to cheat.

5. Prisoner's Dilemma in Oligopolies

So, what does the Prisoner's Dilemma have to do with oligopolies?

Well, suppose there are two grocery stores that comprise an oligopoly.

If they could both agree to keep prices high, it would be in each of their profits--\$50 million and \$50 million.

However, if they compete with one another and can't agree to keep prices high, they both slash prices and make \$25 million each.

If Grocery Store 1 keeps prices high while Grocery Store 2 slashes prices, Grocery Store 1 loses out and Grocery Store 2 gains all the business.

Grocery Store 2	Grocery Store 1		
		Slash Prices	Keep Prices High
	Slash Prices	\$25 million, \$25 million	\$10 million, \$75 million
	Keep Prices High	\$75 million, \$10 million	\$50 million, \$50 million

Again, what is the best strategy for both stores combined?

Just like on the previous slide with the prisoners, they both have an incentive to cheat on one another and slash prices--at least in the short run--and collusion breaks down.

6. Cartels

A **cartel** is a group of colluding firms. Cartels are illegal in the United States through our antitrust laws.

IN CONTEXT

The most common example in the world is OPEC, the group of countries that export oil. They meet

annually to coordinate prices and production levels.

While these meetings are likely very successful, with all parties leaving the meeting thinking that each other is going to do exactly what they agreed upon, generally the world price of oil is lower than the agreed upon price.

Why would that be? Well, as soon as they leave the meeting, any one of them could start producing a bit more, and as they start producing a bit more, this will increase the supply of oil on the world market and drive down price.

Therefore, the Prisoner's Dilemma comes into play in many real world situations.



TERM TO KNOW

Cartel

A group of colluding firms



SUMMARY

We began today's lesson by discussing the different factors that affect the **behavior of firms**. We learned that an **oligopoly** is a market structure with the following **characteristics**: **few firms** selling similar, but not identical, products; significant **barriers to entry**; **output and pricing** between competitive markets and monopoly; and interesting **collusive behavior** that works or breaks down according to the **Prisoner's Dilemma**. Lastly, we discussed **cartels** as a group of colluding firms.

Source: Adapted from Sophia instructor Kate Eskra.



TERMS TO KNOW

Cartel

A group of colluding firms.

Collusion

An attempt by firms to agree on prices and the number of units produced.

Oligopoly

An industry market structure characterized by a few firms selling similar products.

Prisoner's Dilemma

A model used to illustrate why collusion tends to break down.