



## Microeconomics: Government Role in the Market System

The ideal free market (*laissez-faire*) system is self-regulated and does not include government economic intervention. It brings buyers and sellers together to exchange goods and services and establishes market prices. The prices that result establish the “value of goods” based on the availability of resources and the supply & demand of the goods. Competition forces businesses to be more efficient and leads to the best allocation of scarce resources.

The “invisible hand” concept that Adam Smith described was that the ideal free market, although driven by individuals interested in profiting themselves, would end up providing a range of goods and services that benefit society as a whole.

As we know, the market system is far from the ideal due to **imperfect competition**, **externalities**, and the **free rider problem**.

In a **perfectly competitive market**, there are no limits to firms entering or exiting the market, no single seller or buyer can influence the price of a good (price taker), a large number of firms sell an identical product, many buyers are in the market, and the price of the products are known to all buyers and sellers.



The reality, however, is that there may be one or a few firms controlling the entire market, significant barriers to firms entering and exiting the market, price-collusion, and price influence by either the buyer or seller. This is called **imperfect competition**.



**Externalities**, or **third-party effects**, are a cost or benefit that impacts a third-party who is NOT involved in the economic transaction. For instance, a paper manufacturing plant sells paper to consumers. Nearby residents (not the consumers) are affected by the air pollution from the paper plant. This is a negative externality. An example of a positive externality would be vaccines which reduce the chance of an infection spreading to others, even those who haven’t been immunized.

The **marginal private cost (MPC)**, or the cost for a business to produce an additional unit of a good or service, does not take into account of external costs (or benefits). (The marginal private cost is represented by the firms’ supply curve). Externalities lead to inefficiencies in markets, where government intervention is justified.



The cost (or benefit) associated with externalities is called the **marginal external cost (MEC)**. The true cost of production of a good is called the **marginal social cost (MSC)**. The MSC takes into account both the marginal private cost and the marginal external cost of production.

$$MSC = MPC + MEC$$

Note for a negative externality, the marginal external cost is a positive number (because it technically costs society more than the cost of producing the good). For a positive externality, the marginal external cost is a negative number because it is a benefit; the benefit of the good to society is more than the benefit received by the buyer.

In essence, with a negative externality, suppliers would produce too much of a good. The imposition of taxes or strict regulation increases the cost of production and shifts the supply curve to the left. Conversely, suppliers would produce too little of a good with a positive externality (for society's optimal amount). With government subsidies or tax cuts, the demand curve shifts to the right towards an efficient level of output for society.

So, how do governments correct for negative externalities? In other words, make businesses "pay for" the external cost associated with the production of their good? This is called internalizing the externality. There are a few ways: (1) private property rights (2) legislative controls (e.g. requiring installation of pollution control devices) (3) taxation (such as the high tax on cigarettes and alcohol) and (4) permits (e.g. carbon cap and trade system).

**Public goods** are those where one person's consumption does not affect the amount available for someone else (non-rivalry) and no one can be excluded (non-exclusive) from receiving the good (e.g. fireworks, fire alarm, national defense, etc.). It is also generally difficult to identify who is using the good and how often.

The **free rider problem** occurs when the producer of a **public good** has no means to charge for such goods, and people have no incentive to pay for it. It explains why the private sector has no incentive to produce public goods and public goods should be provided by the public sector (governments).

**Private goods** are those where one person's consumption affects someone else's ability to consume the good (called **rivalry**), and if you don't have the money, you don't get the good or service (**exclusive**).

There is always a trade-off between the production of consumer goods and environmental impact. In order for a good to incorporate the costs of the environmental impact of production (negative externality), the price of the good will have to go up, sometimes to the point of becoming unaffordable. Consumers are not necessarily willing to trade off convenient and cheap goods for the sake of knowing that a company is producing a good in an environmentally responsible manner.



## Practice Problems

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1. Which of the following are public goods?  
(a) Hospital (b) Tickets to the Canucks game (c) A toll bridge (d) Sidewalk  
(e) Jasper National Park (f) Street lights
2. The table below shows the marginal private cost and marginal external cost of drilling for oil. (a) Calculate the marginal social cost at each level of production. (b) If the market is competitive and there are no regulations imposed, when 500,000 barrels of oil are produced, what is the price per barrel of oil? (c) If the government imposes a tax equal to the marginal external cost, what is the price per barrel when 500,000 barrels are produced?

Quantity (barrels of oil)	Marginal private cost (\$ per barrel)	Marginal external cost (\$ per barrel)	Marginal social cost (\$ per barrel)
100,000	20	10	
250,000	30	15	
500,000	40	20	
750,000	50	25	
1,000,000	60	30	

3. True or false: For a positive externality, the marginal social cost is less than the marginal private cost.
4. Which of the following is NOT one of the assumptions of the theory of perfect competition?  
(a) Any firm can easily enter or leave the industry  
(b) There are many producers of an identical product  
(c) No individual firm can affect the price of the product it sells  
(d) An individual consumer can affect the price that a product is sold for  
(e) Firms cannot work together to set the price of a good (non-price competition)



## Solutions

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1. (a) Public (b) Private (c) Private (d) Public (e) Private (all national parks charge fees for entry and use) (f) Public

2. (a)

Quantity (barrels of oil)	Marginal private cost (\$ per barrel)	Marginal external cost (\$ per barrel)	Marginal social cost (\$ per barrel)
100,000	20	10	30
250,000	30	15	45
500,000	40	20	60
750,000	50	25	75
1,000,000	60	30	90

(b) \$40 per barrel

(c) \$60 per barrel (this is the marginal social cost price)

3. T

4. d

