

We are going to study one case of market failure: externalities.

More specifically, market failure occurs when the market mechanism or price mechanism performs **badly**, or **fails** to perform at all.

Step one: Look at the photos

Exercise 1:

1. Complete the table below:

	Photo 1	Photo 2	Photo 3
Describe	We observe a, a discharging dark into the atmosphere	We recognize city, Buses and cars in Piccadilly circus	We can see a diagram showing two types of
What is the problem?	The air pollution of the atmosphere comes from the activity of	Drivers are trapped in the traffic The problem is the in the city.	Production and consumption create/ generate pollution in
Explain the bad effects of the concern	Any fume is bad for people's It might involve Fume generates greenhouse gas It bores a hole in the ozone layer	In this case people lose and they could be late to go to work. Traffic jam creates tiredness and people are productive.	Industrial waste and consumer waste are dangerous products destroying environment which is a resource.

2. Why can any of these situations from the photos illustrate a market failure?

They are examples of market failure, i.e. situations in which the market does not

Some costs arise from these economic activities that affect somebody than the people engaged in the activity= economic side-effects.

These costs are not in the costs of production. Thus, market PRICES do not reflect the charges levied in the exchange for all affected parties to the exchange of goods or services.

3. How do economists name these situations?

Bad side-effects are called negatives according to economists.

Exercise 2:

	Describe	Explain why it is considered as a positive externality
Photo 1	A bee is pollen from inside flowers or a honey bee is	Pollination of by honey bees is a positive externality because bees pollinate for free.
Photo 2	A little kid is being	Vaccination prevents It permits good health and improves people Moreover, people do not stop and the economic activity is going on.
Photo 3	A little boy is laughing at a graduated figurine wearing a hat. He is surrounded by several books.	Education reinforces people's knowledge and what impacts positively their productivity which is a key factor of economic
Photo 4	This ad encourages people to adopt energy transport by walking, running... It also promotes turbine for clean energy.	Using clean energy involves a positive impact on the Having a good improves people well-being.
Photo 5	Olympic game in in 2012	This famous sport event has caused positive effects in It has prompted the economic activity of the city, in services,and
Photo 6	Prince Harry 's in 2018	It has provoked an money (windfall) and has had a positive impact for the economy in the UK. It has propped up the retail sector by selling some item referring to the wedding:,, ... inspired by Megan and Harry.

Sump up:

Our model of production and consumption involves- effects which could be either negative or positive. The first ones reduce population being while the second ones it.

The market is to charge / to reward on these side-effects.

Economists call the third-party effects arising fromand of goods and services for which no appropriate compensation is

Step 2: Negative and positive externalities in economics

→ A power station

Figure 10.2

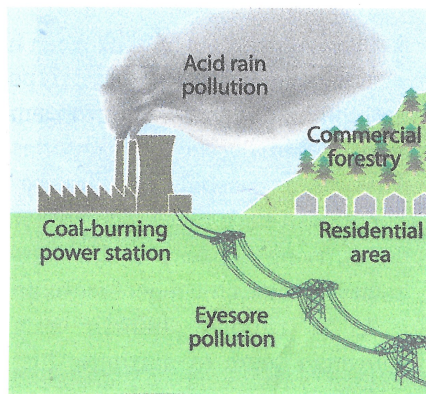
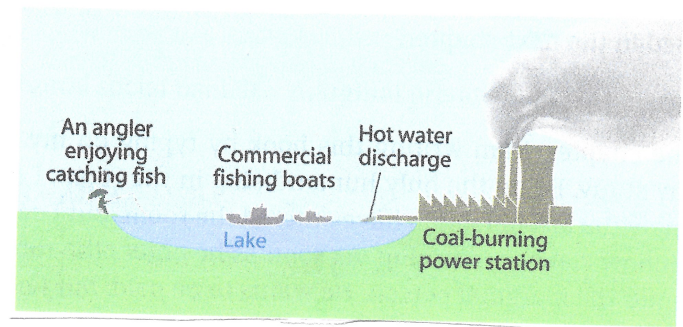


Figure 10.3



→ Text 1: Negative and positive externalities

Negative externalities or external costs

Consider the power station illustrated in Figure 10.2, which discharges pollution into the atmosphere in the course of producing electricity. We can view a negative production externality (or external cost) such as pollution as being that part of the *true* or *real* costs of production which the power station evades by dumping the bad on others, e.g. the people living in the houses and the businesses in the commercial forestry industry. The price that the consumer pays for the good (electricity) reflects only the *money* costs of production, and not all the *real* costs, which include the external costs (including the eyesore or visual pollution also shown in the diagram). In a market situation, the power station's output of electricity is thus under-priced. The incentive function of prices has once again broken down – under-pricing encourages too much consumption of electricity, and therefore over-production of both electricity and the spin-off, pollution.

Positive externalities or external benefits

Figure 10.3 shows the power station illustrated in Figure 10.2 again, but I have assumed that the production of electricity yields positive externalities (or external benefits) rather than negative externalities. I have assumed that the power station ----- warm (but clean) water into the lake adjacent to the power station. Warmer temperatures ----- fish stocks and commercial fishing boats and private anglers then benefit. Unless it owns the lake, the power station company cannot ----- the fishermen for the benefits they are receiving. (---)

Help box:

To dump: to put down, to get rid of something unwanted.

Eyesore: a thing that is very ugly.

To break down: to stop working.

Spin off: something unexpected but useful resulting from an activity.

1. Give the formula of « real costs ».

2. Why is electricity under-priced?

3. What is meant by « the incentive function of price »? Why has this function broken with the power station's output?

4. Fill in the text with the appropriate words.

→ Sump up : different types of externalities

1. Identify different types of externalities

Tell if each example is either a negative or a positive externality

- a. Commercially owned bees pollinating fruit trees in neighbouring gardens.
.....→
- b. Congestion caused by private motorists increasing firms' transport and delivery costs.
.....→
- c. Acid rain pollution discharged by a power station which harms a nearby commercially run forest.
.....→
- d. Households benefiting from the beauty of neighbouring gardens.
.....→
- e. Noisy music at a party disturbing neighbouring households.
.....→
- f. Dust pollution discharged by brickworks breathed by asthmatic children living nearby.
.....→
- g. A farmer benefiting from drainage which was undertaken by a neighbouring farmer
.....→
- h. Commercial beekeepers benefiting from the private gardens of nearby houses.
.....→

Help box :

To harm: to damage or to have a bad effect on something.

Brickworks: works of building.

Undertake: to begin an activity.

Beekeepers: apiculteurs.

2. Rank the different types of externalities

Put each example at the right place into the table below:

Types of externality	External costs or negative externality	External benefits or positive externality
Pure production externalities (generated and received in production)
Mixed production externalities (generated in production but received in consumption)
Pure consumption externalities (generated and received in consumption)
Mixed consumption externalities (generated in consumption but received in production)

Step 3: How to solve traffic jams?

Text 1: The introduction of the London congestion charge

In February 2003, amid much fanfare, the London congestion charge was introduced. At the time many economists believed that this marked the triumph of economic common sense over narrow self-interest and the refusal on the part of newspapers like the *Daily Mail* to accept the consequences of ever more cars on urban roads. Economists confidently believed that many other cities, both in the UK and abroad, would rush to adopt London-style road pricing. In the outcome, this has not happened, partly because of the alleged ill-design of the London congestion charge. In November 2008, Manchester voters were asked to approve the introduction of a city centre congestion charge and they voted against it. The following article was published the week before the London congestion charge came into operation.



Congestion in central London

For 200 years, travel has been getting easier, cheaper and quicker. But many transport systems in industrial countries are now reaching full capacity. Urban roads are a particular problem. So forget science fiction visions of personal flying machines; the next big change in the way we get about is a charge for the congestion we cause. It is coming soon to cities near you. The most ambitious experiment yet starts on the streets of central London on Monday.

Vehicles in central London move no faster today than horse-drawn omnibuses did 100 years ago. Even though only 15% of city-centre travel is by car, the gridlock is endured by residents, commuters and business. Estimates of the economic costs – in lost time, wasted fuel, increased vehicle operating costs – tend to be in the range of 2–4% of gross domestic product. Because the costs of congestion rise steeply when usage is close to a road's capacity, a small reduction in traffic at peak times can bring disproportionate benefits.

The solution, most economists and transport planners agree, is to charge for the use of roads

at times of high demand. Such charges are common in other network industries: no one bats an eyelid about paying more for daytime telephone or mobile phone calls; night-time electricity is cheaper in many countries; and rail and aircraft tickets are dearer at peak times. But until recently, roads have been viewed as different: politicians and the public have rejected the idea of paying to use the Queen's highway.

To an economist, the problem of road congestion has been understood for decades. The underlying theory dates back to Arthur Pigou's 1920 book, *The Economics of Welfare*. While a driver on an empty rural road causes few problems to others, once traffic levels rise, each additional road user lowers the speed of all other drivers on the road. No driver bears this cost; so too many people drive for the capacity of each road; it becomes congested and everyone is worse off.

Pigou's theoretical solution is to levy a charge that reflects the additional cost each driver imposes on other road users. This would mean that only those who value travel more than the charge would take to the roads, which would be less congested. Everyone else would drive at another time, take the bus, or stay at home.

Financial Times, February, 2003.

Help box:

alleged-ill-design: modèle prétendu mauvais
gridlock: traffic jam
commuters: inhabitants close to the city
vehicle operating costs: coûts d'entretien du véhicule
gross domestic product: PIB
steeply: very fast
bats an eyelid: move
dearer: more expansive
worse off: opposite to better
to levy: to take (money)

1. What is the concern quoted in the text?
2. What does the Pigou's solution consist in?

Text 2: 'Pigovian Taxes May Offer Economic Hope'

Taxes on activities with harmful side effects (...), these levies are known as Pigovian taxes, after the British economist Arthur C. Pigou, who advocated them in his 1920 book, "The Economics of Welfare." In today's deeply polarized political climate, they offer one of the few realistic hopes for progress. To see how Pigovian taxes work, consider a driver checking out the offerings at his local auto dealership. He is trying to decide between two vehicles, one weighing 6,000 pounds and the other, 4,000 pounds. After comparing sticker prices, mileage estimates and other features, he views the choice as roughly a tossup. But because he has a slight preference for the larger vehicle, he buys it.

His decision, however, could be viewed as a bad choice for society as a whole, because of the side effects. The laws of physics tell us that heavier vehicles tend to cause more damage in crashes. They also spew more emissions into the air and cause more wear and tear on roads. By providing an incentive to take those external costs into account, taxing vehicles by weight would make the total economic pie larger. Those who don't really need heavier vehicles could buy lighter ones and pay less tax. Others could pay the extra tax as fair compensation for their heavier vehicles' negative side effects.

Heads, You Win. Tails, You Win, Too, JAN. 5, 2013, By ROBERT H. FRANK
<http://www.nytimes.com/2013/01/06/business/pigovian-taxes>.

1. Who was Arthur Cecil Pigou?

As a teacher and builder of the school of economics at the [University of Cambridge](#), he trained and influenced many Cambridge economists who went on to fill chairs of economics around the world. His work covered various fields of economics, particularly [welfare economics](#), but also included [industrial fluctuations](#), unemployment, [public finance](#), [index numbers](#), and measurement of [national output](#). (...)

Pigou's most enduring contribution was *The Economics of Welfare*, 1920, in which he introduced the concept of [externality](#) and the idea that externality problems could be corrected by the imposition of a [Pigovian tax](#). The externality concept remains central to modern welfare economics and particularly to [environmental economics](#). The [Pigou Club](#), named in his honour is an association of modern economists who support the idea of a [carbon tax](#) to address the problem of [climate change](#).
www.wikipedia.org/wiki/Arthur_Cecil_Pigou

2. From the text try to explain the following: 'internalize external costs'.

3. Why are Pigovian taxes designed to correct market failures or negative externalities?

4. Does Pigovian tax sound economically efficient to reduce pollution?