

Edexcel
AS Level
Econ
(Code: WEC13 01)
Unit 01
Market failure



Chapter 14 – Sources of market failure

MARKET FAILURE

The role of markets is to allocate scarce resources. In many cases, markets are an extremely efficient way of doing this. However, in some cases, markets fail in one of two ways:

- markets may lead to production of too many or too few goods; this is known as **partial market failure**
- much more rarely, markets may not exist (known as **missing markets**), leading to no production of a good or service; this is known as **complete market failure**.

There are a number of types of **market failure**, briefly explained in the rest of this chapter and then more completely explained in subsequent chapters.

EXTERNALITIES

Prices and profits should be accurate signals, allowing markets to allocate resources efficiently. In reality, market prices and profits can be misleading because they

may not reflect the true prices and profits to society of economic activities. These differences are known as the externalities of an economic activity. For instance, in Brazil it makes commercial sense to cut down the rain forest to create land for farming cattle that are then sold as meat for hamburgers. However, this could lead to economic disaster in the long term because of global warming. The market is putting out the wrong signals, leading to a misallocation of resources.

UNDER-PROVISION OF PUBLIC GOODS

The market, for a variety of reasons, may fail to provide certain goods and services, or may underprovide them. One example of this is in the provision of public goods. These are goods such as defence, street lighting and police services. One key reason for the under-provision of public goods is that it is relatively easy to gain the benefits from the good without having to pay for it.

INFORMATION GAPS

In an efficient market, both buyers and sellers have good knowledge of the product. Sometimes, though, information is imperfect. For example, a consumer buying a soft drink is likely to have tried out a variety of drinks before. The drink being bought is likely to be something the consumer likes and so the consumer has good information about the product. However, what about the purchase of a washing machine, which the consumer might only make every eight years? In this case, the consumer might have imperfect information and make the wrong choice. Other examples relate to the problem of **asymmetric information**.

MORAL HAZARD

Moral hazard is a term used to describe a situation in which an individual or organisation is protected from the consequences of their actions. They know that someone else will have to deal with any problems that occur. As a result, there is no incentive to take the normal precautions and act sensibly, which may result in unnecessary risk-taking and subsequent failure.

On an individual level, people with access to free healthcare are less likely to look after themselves than others who have to pay for any health treatment. It has been argued that welfare benefits prevent some people from not actively seeking work or retraining if they lose their jobs.

SPECULATION AND MARKET BUBBLES

Speculation means an economic agent buys or sells something in the expectation of a future price change in the hope of generating a profit. This happens all the time in financial markets as traders buy and sell stocks, shares, currencies and other financial instruments to make a small profit on the transactions. Occasionally though, the speculative motive is all one way and a market bubble can be created.

Chapter 15 – Positive and negative externalities

PRIVATE AND SOCIAL COSTS AND BENEFITS

A chemical plant may dump waste into a river in order to minimise its costs. Further down the river, a water company has to treat the water to remove dangerous chemicals before supplying drinking water to its customers. Its customers have to pay higher prices because of the pollution.

This is a classic example of an **externality or spillover effect**. Externalities arise when private costs and benefits are different from social costs and benefits. A **private cost** is the cost of an activity to an individual economic unit, such as a consumer or a firm.

If social cost is greater than private cost, then a **negative externality or external cost** is said to exist.

However, not all externalities are negative. A company may put up a building that is not just functional but also beautiful. The value of the pleasure that the building gives to society over its lifetime (the social benefit) may well far exceed the benefit of the building received by the company (the private benefit). Hence, if social benefit is greater than private benefit, a **positive externality or external benefit** is said to exist.

EXTERNALITIES OF PRODUCTION AND CONSUMPTION

Production externalities arise when the social costs of production differ from the private costs of production.

- Negative externalities of production (or **negative production externalities**) occur when social costs are greater than private costs in production. An example is when a factory pump polluted water into a river at no cost to itself.
- Positive externalities of production (or **positive production externalities**) occur when social costs are less than private costs in production. **Consumption externalities** arise when the social benefits of consumption differ from the private benefits of consumption.
- Positive externalities of consumption (or **positive consumption externalities**) occur when social benefits are greater than private benefits in consumption. For example, when a child is given an injection to prevent a disease, it makes it less likely that another unprotected child in the local area will get the illness.
- Negative externalities of consumption (or **negative consumption externalities**) occur when social benefits are less than private benefits in consumption. For example, with passive smoking, a person who smokes in their home harms the health of others in the home.

MARKET FAILURE

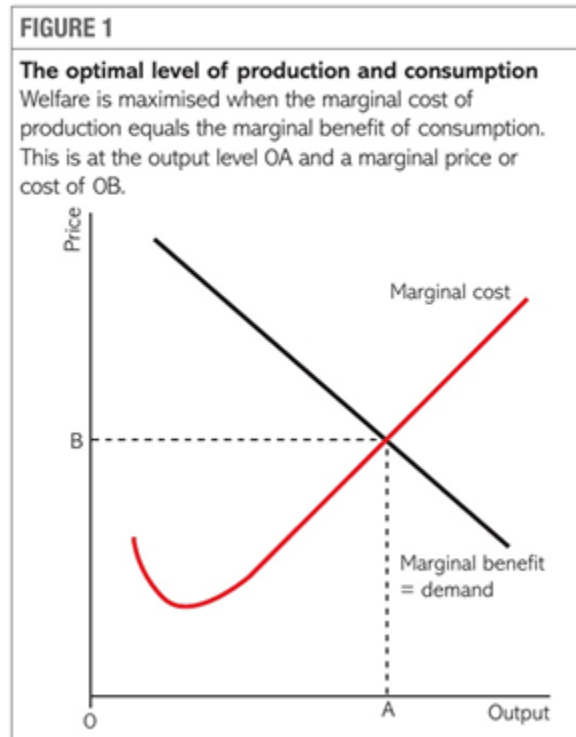
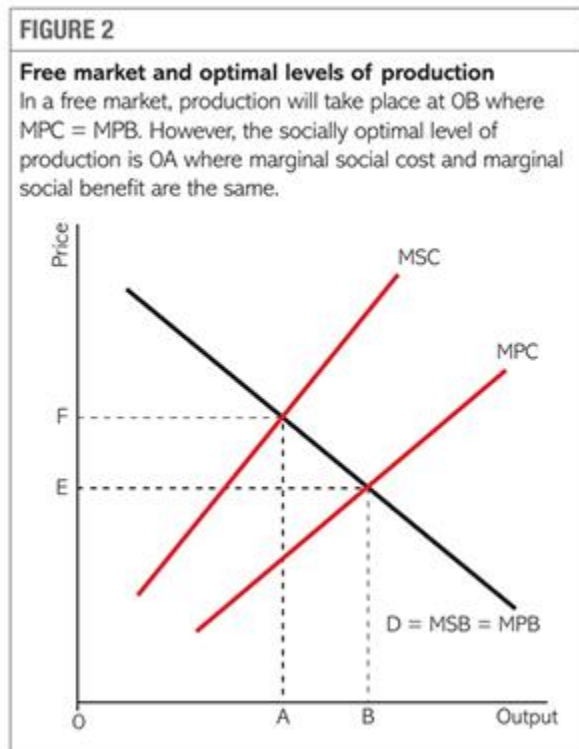
The price mechanism allocates resources. Output is fixed where demand equals supply at the point where private costs equal private benefits.

The greater the externality, the larger will be the difference between private costs and benefits and social costs and benefits. The greater the externality, the greater the market failure and the less market prices provide accurate signals for the optimal allocation of resources.

MARGINAL COSTS AND BENEFITS

The difference between social costs and social benefits changes as the level of output changes. This can be shown using marginal analysis. The margin is a possible point of change. So the marginal cost of production is the extra cost of producing an extra unit of output. The marginal benefit is the benefit received from consuming an extra unit of output.

The marginal cost of production is likely to change as output increases. In Figure 1, it is shown as at first falling and then rising.



WELFARE LOSSES WITH PRODUCTION EXTERNALITIES

In many markets, social costs and private costs differ. So too do social benefits and private benefits. Figure 2 shows a situation where there are negative externalities of production. At every level of output, the marginal social cost of production is higher than the **marginal private cost**. So, the marginal social cost curve, the MSC curve, is higher and to the left of the marginal **private cost curve**, the MPC curve. It is assumed here that the marginal social benefit (MSB) and marginal private benefit (MPB) are the same. So, the demand curve is also the MSB and MPB curves.

Market equilibrium occurs when marginal private cost equals marginal private benefit at an output level of OB and a price of OE. Higher prices lead to consumers buying less and producers making losses. The socially optimum level of production is lower than OB, where marginal social cost equals marginal social benefit. The welfare loss to society is the difference between marginal social cost and private benefit, calculated as JK and HL on the last unit produced.

FIGURE 3

Welfare loss triangle from negative production externalities

If production takes place at the free market level of output of OB, then there will be a deadweight loss of welfare to society of GJK.

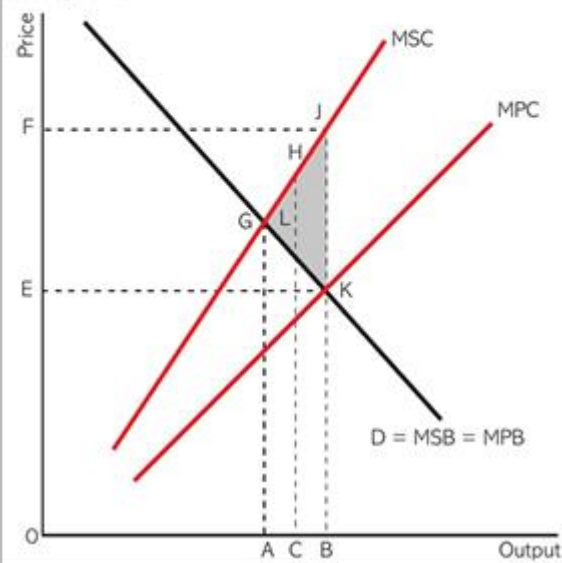
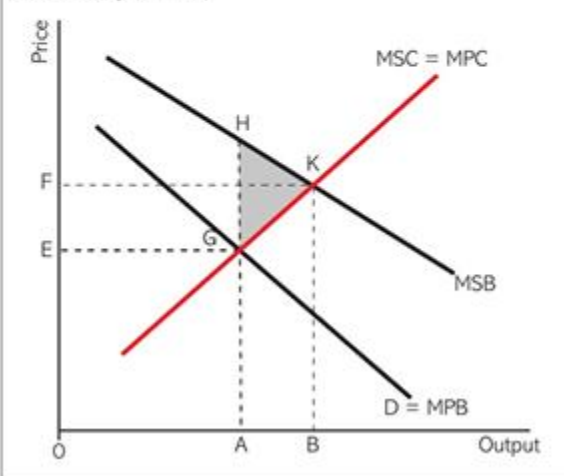


FIGURE 4

Welfare triangle with positive consumption externalities showing potential gain from increasing output

If production takes place at the free market level of output of OA, then the triangle GHK shows the welfare gain that could be achieved if output rose to the socially optimal level of output of OB.

**WELFARE LOSSES WITH CONSUMPTION EXTERNALITIES**

The analysis reveals that welfare losses can occur when consumption externalities or externalities of consumption are present. In a situation where the marginal social benefit is greater than the marginal private benefit, positive externalities are present. However, the free market equilibrium is at an output level of OA, where the marginal cost equals the marginal social benefit.

SUBJECT VOCABULARY

asymmetric information when information is not shared equally between buyer and seller and one side has an advantage.

complete market failure when a market fails to supply any of a good that is demanded, creating a missing market.

market failure where resources are inefficiently allocated due to imperfections in the working of the market mechanism.

missing market a market where the market mechanism fails to supply any of a good.

partial market failure when a market for a good exists but there is too much or not sufficient production of the good.

SUBJECT VOCABULARY

consumption externalities or external benefits of consumption when the social costs of consumption are different from the private costs of consumption.

externality or spillover effect the difference between social costs and benefits and private costs and benefits.

marginal analysis focuses on small or incremental changes in an economic variable such as cost or output.

marginal social and private costs and benefits the social and private costs and benefits of the last unit either produced or consumed.

negative consumption externalities when social benefits are less than private benefits.

negative externality or external cost exist if net social cost (social cost minus social benefit) is greater than net private cost (private cost minus private benefit).

negative production externalities when social costs exceed private costs.

positive consumption externalities when social benefits exceed private benefits.

positive externality or external benefit exists if net social benefit is greater than net private benefit.

positive production externalities when social costs are less than private costs.

private cost and benefit the cost or benefit of an activity to an individual economic unit such as a consumer or a firm.

production externalities or external benefits of production when the social costs of production are different from the private costs of production.

Chapter 16 – Non provision of public goods

PUBLIC GOODS

Nearly all goods are **private goods** (not to be confused with goods produced in the private sector of the economy). A private good is rivalrous. It is a good where consumption by one person results in the good not being available for consumption by another.

A few goods, however, are **public goods or pure public goods**. These are goods that possess the opposite characteristics to private goods.

- Non-rivalry - consumption of the good by one person does not reduce the amount available for consumption by another person; sometimes this is also known as non-diminishability or non-exhaustibility.
- Non-excludability - once provided, no person can be excluded from benefiting; equally, no person can opt out of receiving the good, which is known as non-rejectability.

Public goods are also different from private goods because the marginal cost (the extra cost) of providing a unit of the good is zero.

Goods that can be argued to be public goods are:

- defence
- the judiciary and prison service
- the police service street lighting.

Many other goods, such as education and health, contain a small public good element.

THE FREE RIDER PROBLEM

If the provision of public goods were left to the market mechanism, there would be market failure. This is because of the **free rider** problem. A public good is one where it is impossible to prevent people from receiving the benefits of the good once it has been provided. So, there is very little incentive for people to pay for consumption of the good.

A free rider is someone who receives the benefit but allows others to pay for it. For instance, citizens receive benefits from defence expenditure. But individual citizens could increase their economic welfare by not paying for it.

In practice, there are often ways in which providers of public goods can exclude consumers from benefiting from the public good. The problem of free riding can to some extent be solved for these **quasi-public or non-pure public goods**.

SUBJECT VOCABULARY

free rider a person or organisation that receives benefits that others have paid for without making any contributions.

non-excludability once provided, it is impossible to prevent any economic agent from consuming the good.

non-rejectability once provided, it is impossible for any economic agent not to consume the good.

non-rivalry, non-diminishability or non-exhaustibility consumption by one economic agent does not reduce the amount available for consumption by others.

private goods goods that possess the characteristics of rivalry (once consumed, it cannot be consumed by any one else) and excludability (it is possible to prevent someone else from consuming the good).

public goods or pure public goods goods that possess the characteristics of non-rivalry (or non-diminishability) and non-excludability (which includes the characteristic of non-rejectability).

quasi-public goods or non-pure public goods a good that does not perfectly possess the characteristics of non-rivalry and non-excludability and yet which also is not perfectly rival or excludable.

Chapter 17 – Imperfect market

IMPERFECT MARKET INFORMATION

In a perfect market, buyers and sellers have potential access to the same information. There is symmetric information. However, many decisions are based on **imperfect information**. Both buyers and sellers do not find out the information they need to make the decision that maximises their welfare. There is then **information failure or an information gap**.

Information gaps occur when buyers or sellers have more information than sellers, leading to asymmetric information. Buyers often suffer from information failure, overestimating product benefits and paying higher prices for output. This results in a misallocation of resources, as too much is bought compared to perfect information, leading to a higher demand curve for goods.

THE MARKET FOR SECOND-HAND CARS

The problem of asymmetric information was first outlined by the Nobel Prize-winning economist, George Akerlof. In 1970, he published a paper in which he used the example of second-hand cars to discuss the problem of asymmetric information. He argued that buyers of second-hand cars do not know whether any individual second-hand car is a good car or whether it is a 'lemon', a very poor quality car with significant defects. Buyers therefore have to guess whether or not a second-hand car is of good quality. Because they do not know, they are only prepared to offer to pay average prices for better than average quality cars. Owners of better than average-quality cars therefore tend not to sell them because they cannot get a high enough price.

MARKET EXAMPLES

Asymmetric information can lead to a misallocation of resources and market failure, as the example of second-hand cars shows. There is a number of important markets where this occurs.

Education - Education provides an example of the **principal-agent problem**. The principal is the individual or organisation that benefits or loses from a set of economic decisions. The agent is an individual or organisation that makes decisions on behalf of the principal. In education, the principal is the child or student. The agents are the parents and guardians of the child and society in general represented by government agencies, such as the school and the courts. A child suffers from asymmetric information. He or she typically does not see the long-term benefits of education.

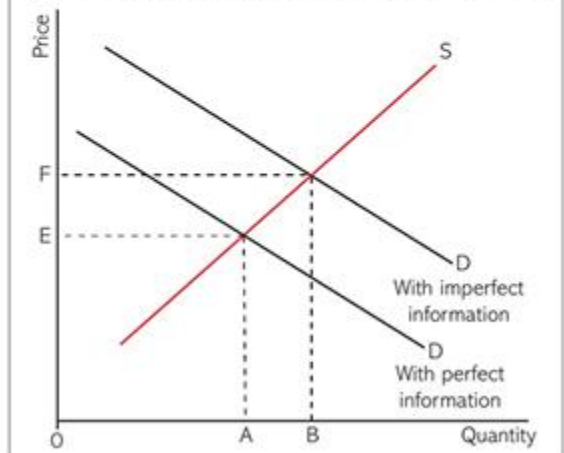
Pensions Many argue that young workers today are paying too little into pensions and instead spending the money on everything from houses to cars to holidays. This is because of asymmetric information. Many 25-year-olds may not be able to imagine what it will be like to live as a 70-year-old. As a result, they may ignore the loss of welfare that will come from having a low income at 70 to boost their current spending and short-term pleasure.

Financial services - Financial institutions often have more information about the products they sell than their customers. The 2008 financial crisis revealed mistreatment of customers by financial institutions and employees. Bank employees in the USA were incentivised to sell mortgages to low-income households, unaware they couldn't repay. This led to the largest financial crisis since the 1920s, resulting from information failure and **moral hazard**.

FIGURE 1

Imperfect information

Buyers possess imperfect information, overestimating the benefits of buying a good. The result is that the actual demand curve is to the right of the demand curve where they have perfect information. AB too much is bought, leading to a misallocation of resources.



Advertising Some advertising, such as small ads in newspapers or notifications for sale on sites such as eBay®, increases information for buyers. It makes them aware of what is on offer in the marketplace. However, most advertising is persuasive advertising. It is designed to change attitudes on the part of the buyer. As such, it attempts to increase information failure on the part of the buyer to the benefit of the seller.

Chapter 18 – Moral hazard, speculation and market bubbles

IMPERFECT MARKET INFORMATION

The Getting Started above is an example of **moral hazard**, which we first came across in Chapter 14. The economist Paul Krugman described it as 'any situation in which one person makes the decision about how much risk to take, while someone else bears the cost if things go badly'.

It arises when both parties have incomplete information about each other. In other words, **asymmetric information**, where buyers and sellers have different amounts of information, with one group having more information than the other. In addition, this relationship affects the behaviour of the parties involved. If you know that Apple® will replace your phone, your behaviour is likely to alter and you become less careful.

When banks fail, some people lose their jobs, others lose their savings, future investors may not be able to get loans and governments may spend billions on support. All this reduces aggregate demand in the economy and can have serious effects on the whole economy. For this reason, banks are sometimes regarded as being **'too big to fail'**.

SPECULATION AND MARKET BUBBLES

Speculation means an economic agent buys or sells something in the expectation of a future price change in the hope of generating a profit. This happens all the time in financial markets as traders buy and sell stocks, shares, currencies and other financial instruments to make a small profit on the transactions. Occasionally though, the speculative motive is all one way and a **market bubble** can be created.

Speculation is an economic agent buying or selling something in anticipation of a future price change to generate a profit. This occurs in financial markets, where traders buy and sell financial instruments to make small profits. Sometimes, speculative motives combine to create a market bubble, where rising demand drives prices beyond normal levels. Emotion and peer pressure can overcome rational analysis, leading to an upward cycle. However, bubbles can suddenly collapse, causing panic and disastrous losses. Historical examples include the tulip bubble in 1637, the South Sea bubble in 1721, the stock market bubble of the 1920s, and the dot.com bubble of the late 1990s.

SUBJECT VOCABULARY

imperfect information where buyers or sellers or both lack information to make an informed decision.

information failure or information gap where buyers or sellers or both do not have the information that is available to make a decision.

moral hazard when an economic agent makes a decision in their own best interest knowing that there are potential negative risks, and that if problems result, the cost will be partly paid by other economic agents.

principal-agent problem occurs when the goals of principals, those who would gain or lose from a decision, are different from agents, those making decisions on behalf of the principal. Examples include shareholders (principals) and managers (agents), or children (principals) and parents (agents).

SUBJECT VOCABULARY

asymmetric information where buyers and sellers have different amounts of information, with one group having more information than the other.

cryptocurrency a digital or virtual currency that uses cryptography as security, thereby making it secure.

market bubble occurs when rising demand drives prices beyond the level that might normally be expected.

moral hazard when an economic agent makes a decision in their own best interest knowing that there are potential adverse risks, and that if problems result, the cost will be partly borne by other economic agents.

speculation means buying or selling something in the expectation of a future price change and a profit.

too big to fail occurs when the cost to the economy is so great that the government cannot allow it to happen.

Revision questions

1. 2020 May question number 12(e) P1 (marks 12)

Extract B Palm oil production

Palm oil production more than tripled between 1998 and 2018. It is now used in many goods including processed foods, cosmetics, detergents, chocolate and biodiesel. Palm oil requires one-tenth of the land, one-seventh of the fertiliser and only one-sixth of the energy to produce the same amount of oil as soybean. In Indonesia and Malaysia more than 4.7 million workers are employed directly in the palm oil industry. A further 11 million workers are employed indirectly.

The rapid and poorly managed expansion of production has caused large-scale deforestation. The clearing and burning of tropical rainforests has also caused significant greenhouse gas emissions. Palm oil production in Indonesia and Malaysia has led to habitat and biodiversity loss. Endangered animals have been negatively affected. For example, between 2001 and 2017 the population of orangutans fell by 100000 in these countries. Orangutans spend 95% of their time in trees and Indonesian rainforests have been disappearing rapidly. In western Indonesia 69% of elephant habitats have been lost and there are only 100 rhinos left in the wild.

(e) With reference to Extract B, discuss the externalities associated with the production of palm oil.

Illustrate your answer with an appropriate diagram.

2. 2020 May question number 14 P1 (marks 20)

In the UK, in 2018, 10 million consumers travelling abroad did not take out travel insurance. This is despite 30% of consumers with travel insurance having to make a claim and the average medical bill costing £5620.

Evaluate reasons for the underconsumption of travel insurance.

3. 2021 May question number 14 P1 (marks 20)

Between 2000 and 2019 in China the average price of a house increased from 4 000 yuan per square metre (m^2) to 60 000 yuan per m^2 . The ratio of average house prices to average incomes increased from 5.6 to 7.6, showing that houses were becoming less affordable.

Evaluate the impact of market bubbles in the housing market.

4. 2019 May question number 09 P1 (marks 4)

Singapore's economy is highly dependent on trade with the rest of the world. In 2017, Singapore's exports were 173.3% of its GDP.

Explain one role of financial markets in such an economy.

5. 2019 May question number 12 (e) P1 (marks 14)

With reference to Extract B, examine the external costs resulting from increased meat production.

Extract B

Indirect tax on meat needed to address climate change Meat consumption continues to increase around the world and meat production has risen in response. However, meat production has a damaging effect on the environment causing water pollution and 15% of all global greenhouse gas emissions. Excessive use of antibiotics to treat animals is also leading to a decline in the effectiveness of antibiotics used to treat human illnesses.

Many people consume too much meat, seriously damaging their health. This results in an increase in obesity, diabetes and cancer. For example, consuming 100 grams of red meat per day increases the risk of developing diabetes by 19%.

The Paris climate agreement set limits on the amount of global greenhouse gas emissions. However these targets will be missed unless taxes are used to restrict production and consumption. One study looked at the impact of the introduction of a global meat tax. This study found a 40% tax on beef, a 20% tax on dairy products and a 8.5% tax on chicken would reduce emissions and save 500 000 lives a year.

The problems associated with meat production are not well-known by the public. One way to reduce emissions without the need for a tax would be for governments to provide the public with information on the external costs associated with meat production and consumption.