3.3 Market Failure

At the end of this section a student should be able to:

- discuss the factors that lead to market failure such as externalities, monopoly power and imperfect information
- determine and debate how governments can overcome market failure using factors such as taxation, regulation and direct government intervention

What is a Market Failure?

In general, a free market will be pretty good at allocating our precious, scarce resources because firms produce according to what consumers want and what they are willing to pay for a good or service. If there is big demand for something, then firms will react by producing more of it. That way, the resources on our planet are being used but they're being allocated to people who want to use them and they're allocated to people who get a welfare benefit from those resources.

Example: The price of gold in a free market is really high. Why? The free market forces of demand and supply create a market equilibrium at this high price. This is because

- Gold is in big demand. People get lots of benefit from gold as it is a precious metal, attractive to look at and has special qualities that other metals don't
- Gold is very scarce - there is not an abundance of it so via the **rationing function** firms must increase the price of gold to the level where demand = supply, thus creating an equilibrium. If the price were lower, the resource would not be allocated efficiently. This is because there would be excess demand for gold and thus the resource would be undervalued.

In this example, the free market mechanism is working correctly.

Market failure exists when the competitive outcome of markets is not satisfactory from the point of view of society. What is satisfactory nearly always involves **value judgements.**

Normative statements are **subjective statements** – i.e. they carry **value judgements.** For example:

- The government should enforce minimum prices for beers and lagers sold in supermarkets and off-licences in a bid to control alcohol consumption
- Unemployment is more harmful than inflation
- Pollution is the most serious economic problem
- Resources are best allocated by allowing the market mechanism to work freely

Positive statements are **objective statements** that can be tested, amended or rejected by referring to the available evidence. Examples of positive statements include:

- A fall in incomes will lead to a rise in demand for own-label supermarket food
- The rising price of crude oil on world markets will lead to an increase in cycling to work
- Higher interest rates will reduce house price

Market failure is the economic situation defined by an inefficient distribution of goods and services in the free market. In market failure, the individual incentives for rational behaviour do not lead to rational outcomes for the group.

Complete Market Failure

Complete market failure occurs when the market simply does not supply products at all. We sometimes refer to these as "missing markets".

Missing markets
A significant market failure is the failure to produce some goods and services, despite being needed or wanted. Markets can only form under certain conditions, and when these conditions are absent markets may struggle to exist. The most extreme case of a *missing market* is the case of **pure public goods.**

Public goods have the following characteristics:

- **Non-rivalrous/non-diminishable**
  - When a pure public good, such as street lighting, is consumed by one individual, the stock available for others does not diminish, as it would in the case of a private good. A pedestrian passing under a street light has no effect on the supply of lighting whatsoever. As the stock of a public good does not diminish with use, consumers do not need to compete with each other to get access to them. For example, individuals do not need to queue to get access to street lighting.
- **Non-excludable**
  - When a public good is supplied, it is impossible to exclude other individuals from deriving a benefit. For example, once street lighting is made available in an area, all passers-by can benefit, and no one can be denied access to it.
- **Non-rejectable**
  - Unlike a private good, consumers cannot reject a pure public good, and are forced to consume it. An individual cannot reject being defended by the armed forces of a country, nor can they reject the benefit of street lighting.

Pure public goods clearly provide a benefit to the consumer, but, for several reasons, are unlikely to exist in a market economy. Examples include street lighting for roads and national defence services. As markets for these goods are not likely to form they are called missing markets and are considered a special case where demand exists, but supply is absent.

The market mechanism is likely to fail to supply pure public goods because entrepreneurs are unlikely to enter the market, given the impossibility of charging consumers at the point of consumption. Suppliers cannot charge at the point of consumption or use because of the *free-rider problem*. No one would pay because the first person to pay for supply creates a free supply for everyone else! No one can be excluded from the market and prevented from consuming, and hence they are encouraged to become free-riders. Because of this, suppliers are not able to generate any revenue, or make a profit, so a necessary condition for the formation of a market is absent, namely the absence of a profit incentive. With no incentive, entry into the market is deterred, resulting in a missing market.

Watch: Public Goods Explained and explained again!

What are Quasi-Public Goods?

A quasi-public good is a near-public good i.e. it has many but not all the characteristics of a public good. Quasi-public goods are:

- **Semi non-rival:** up to a point, extra consumers using a park, beach or road do not reduce the space available for others. Eventually beaches become crowded as do parks which diminish the quality of the experience. Open access Wi-Fi networks become crowded which diminishes service quality.
- **Semi non-excludable:** it is possible but often difficult or expensive to exclude non-paying consumers. E.g. fencing a park or beach and charging an entrance fee; building toll booths to charge for road usage on congested routes

For example, private enterprise could provide some bridges, roads and tunnels if a charging system could be applied which solves the free-rider problem. However, it is unlikely that all an economy's (households and firm's) need for transport and infrastructure could be met this way. Indeed, toll charge systems could be regarded as inefficient in that traffic slows down to pay at the toll booth, and traffic builds up causing congestion.

However, the introduction of new technology, such as 'smarter' payments systems and number-plate recognition technology means that the free rider problem can be reduced or eliminated and the price mechanism can operate. Hence, over time, technology can convert public goods to quasi-public goods, and eventually to private goods.

Markets for these goods are considered to be incomplete markets and their lack of provision by free markets would be considered to be inefficient and a market failure.

Watch: Quasi-Public Goods Explained

Partial Market Failure

Partial market failure occurs when the market does actually function but it produces either the wrong quantity of a product or at the wrong price.

Partial Market Failures can fail for lots of reasons:

1. **Externalities**

Key Terms:

- **Marginal Private Cost**
  - Marginal private cost is the change in the producer's total cost (or individuals total cost) brought about by the production of an additional unit of a good or service. It is also known as marginal cost of production. For example, if production costs rise from €1,000 to €1,050 as one more unit of a good is produced the marginal private cost is €50.
- **Marginal External Cost**
  - Marginal external cost is the change in the cost to parties other than the producer or buyer of a good or service due to the production of an additional unit of the good or service. For example, suppose it costs the producer €50 to produce another unit of a good. Suppose this production results in pollution which causes €60 worth of damage to another company's plant. The marginal external cost is €60. External costs are caused by negative externalities (see below)
- **Marginal Social Cost**
  - Marginal social cost is the change in society's total cost brought about by the actions of an individual or firm. It includes both marginal private cost and marginal external cost. For example, suppose it costs a producer €50 to produce an additional unit of a good. Suppose that when the additional unit is produced pollution is emitted which causes €60 worth of damage to the paint on your car. The marginal social cost of production is the producer's cost plus the external cost, or €110 (50 + 60)
- **Marginal Private Benefit**
  - The benefits enjoyed by the individual consumers of a particular good – in essence, the utility derived by an individual or business from engaging in an activity. For example, the utility gained from buying a new car.
- **Marginal External Benefit**
  - The change in benefit to others (not the user/purchaser) as a result of the action of a consumer or firm. For example if that new car purchased was an electric vehicle it would have benefits for society as a whole. Marginal External benefits are caused by positive externalities.

- **Marginal Social Benefit**
  - Marginal social benefit is the change in benefits (private and external) associated with the actions of individuals and businesses.

a. Positive Externalities

A positive externality is a benefit that is enjoyed by a **third-party** as a result of an economic transaction. While individuals who benefit from positive externalities without paying are considered to be free-riders, it may be in the interest of society to encourage free-riders to consume goods which generate substantial external benefits. Market failure occurs when merit goods and services are under-consumed under free market conditions.

Merit goods and services are those things that the government feels that people will under-consume and which ought to be subsidised or provided free at point-of-use so that consumption does not depend primarily on the ability to pay for the good or service. The free market will under-produce and consume such a good. Merit goods and services create positive externalities when consumed and these third party spill-over benefits can have a significant effect on societal welfare.

With education, the skills acquired and knowledge learned at university can benefit the wider community in many ways. Unlike negative externalities, which should be discouraged to achieve a socially efficient allocation of scarce resources, positive externalities should be encouraged.

Note merit goods **are not** public goods. For example, people can reject education (by not showing up for school), people can be excluded from education and education quality can diminish the more that use it (a lesson with one teacher and three students is more effective than a lesson with one teacher and 100 students).

Government policies to increase demand for merit goods with positive externalities include:

- Direct provision of merit and public goods – governments control the supply of goods that have positive externalities. For example, by supplying high amounts of education, parks, or libraries.
- Legislation – enacting specific laws. For example, banning smoking in workplaces, or making secondary school attendance mandatory.
- Taxation – placing taxes on certain goods to discourage use and internalise external costs. For example, placing an excise duty on tobacco products, and subsequently increasing the cost of tobacco consumption.
- Subsidies – reducing the price of a good based on the public benefit that is gained. For example, lowering third level education because society benefits from more educated workers.

b. Negative Externalities

A negative externality is a cost that is suffered by a third party as a consequence of an economic transaction. In a transaction, the producer and consumer are the first and second parties, and third parties include any individual, organisation, property owner, or resource that is indirectly affected.

A negative externality is also referred to as an 'external cost'. Negative externalities (e.g. the effects of environmental pollution) cause the social cost of production to exceed the private cost.

Externalities commonly arise in situations where property rights over assets or resources have not been allocated, or are uncertain. For example, no one owns the oceans and they are not the private property of anyone, so ships may pollute the sea without fear of being taken to court.

In contrast to a merit good, consuming a demerit good creates negative spill-over effects. A demerit good is defined as a good which can have a negative impact on the consumer – but these damaging effects may be unknown or ignored by the consumer. Demerit goods also usually have negative externalities – where consumption causes a harmful effect on a third party.

For example, if a driver consumes excessive alcohol and then crashes into an innocent driver causing damage to their vehicle, a negative consumption externality has arisen. Society has suffered because the actual benefit of drinking by some has reduced the benefits possible (from driving) to others. As a result, the socially efficient consumption of alcohol is less than the free market level of consumption.

When negative externalities are present, it means the producer does not bear all costs, which results in excess production. If the negative externality is taken into account, then the cost of alcohol would be higher. This would result in decreased production and a more efficient equilibrium. In this case, the market failure would be too much production and a price that didn't match the true cost of production (private and social costs).

Similarly, cigarette smoking by some individuals in public places will reduce the benefits to others in the form of passive smoking. This may also lead to higher taxes for all taxpayers which the government use to pay for increased healthcare in the future.

Watch: Externalities explained
Watch: Merit and Demerit Goods

2. Imperfect/Asymmetric Information

Imperfect information or information failure means that merit goods are under-produced while demerit goods are over-produced or over-consume. Information failure is another, significant, market failure and can occur in two basic situations.

Firstly, information failure exists when some, or all, of the participants in an economic exchange do not have *perfect knowledge*.

Secondly, information failure exists when one participant in an economic exchange knows more than the other, a situation referred to as the problem of *asymmetric*, or unbalanced, information.

In both cases there is likely to be a misallocation of scarce resources, with consumers paying too much or too little, and firms producing too much or too little. Information failure is common and appears to exist in numerous market exchanges.

It can be argued that markets work best, that is they are at their most efficient, when knowledge is perfect and is evenly shared by all the parties in a transaction. Hence, asymmetric knowledge is an economic problem because one party can exploit their greater knowledge.

There are many examples of information failure associated with economic transactions, including the following cases:

- The estate agent, who exploits the fact that a potential buyer of a property has very little knowledge about the property prices in the area. Eg: Ireland before the Property Price Register
- The cigarette manufacturer, who does not inform smokers of the true health risk of smoking.
- The buyer of a financial product, who is unaware of the true level of risk, as in the case of derivative products.

Watch: Information failure and more here

3. Abuse of Monopoly Power

Market dominance by monopolies can lead to under-production and higher prices than would exist under conditions of competition, causing consumer welfare to be damaged.

A pure monopoly is defined as a single supplier. While there only a few cases of pure monopoly, monopoly 'power' is much more widespread, and can exist even when there is more than one supplier – such in markets with only two firms, called a duopoly, and a few firms, an oligopoly.

The costs of monopoly

- **Less choice**
  - Clearly, consumers have less choice if supply is controlled by a monopolist – for example, the Post Office used to be monopoly supplier of letter collection and delivery services across the UK and consumers had no alternative letter collection and delivery service.

- **High prices**
  - Monopolies can exploit their position and charge high prices, because consumers have no alternative. This is especially problematic if the product is a basic necessity, like water.
- **Restricted output**
  - Monopolists can also restrict output onto the market to exploit its dominant position over a period of time, or to drive up price.
- **Less consumer surplus**
  - A rise in price or lower output would lead to a loss of consumer surplus. Consumer surplus is the extra net private benefit derived by consumers when the price they pay is less than what they would be prepared to pay. Over time monopolist can gain power over the consumer, which results in an erosion of consumer sovereignty.
- **Asymmetric information**
  - There is asymmetric information – the monopolist may know more than the consumer and can exploit this knowledge to its own advantage.
- **Productive inefficiency**
  - Monopolies may be productively inefficient because there are no direct competitors a monopolist has no incentive to reduce average costs to a minimum, with the result that they are likely to be productively inefficient.
- **Less employment**
  - Monopolists may employ fewer people than in more competitive markets. Employment is largely determined by output – the more output a firm produces the more labour it will require. As output is lower for a monopolist it can also be assumed that employment will also be lower.

4. <u>Factor Immobility</u>

Immobile factors of production are factor inputs that are not easily transferable to where we want them to be to satisfy the needs of the market. When factors are immobile it means that they're not being put to good use – they are either unused completely or underused. Therefore, if resources are not being used in the best way possible it is inefficient and can market failure.

Two examples of labour immobility are occupational immobility and geographical immobility.

Occupational immobility of labour

Occupational immobility occurs when there are barriers to labour switching from one job to another leading to these factors remaining unemployed, or being used in ways that are not efficient. To transfer to another job it may require specialist training, education and skills to perform properly. It may even be work experience that is required. Sometimes qualifications need to be achieved before a transfer - for example, a doctor or dentist would need certification to prove they are capable of carrying out their job duties.

Geographical immobility of labour

Geographical immobility refers to barriers people moving from one area to another to find work. There are good reasons why geographical immobility might exist:

Sometimes a job might look really amazing and you know that you are suited to it, but that job is almost 200km away in Dublin and you live in Galway. You have also just bought a house in Galway. How will you work in your dream job? You will have to move because there are no viable transport links for you to get there. You'll also have to leave all of your family and friends which you don't feel too good about.

These are the factors that can cause geographical immobility:

- Insufficient transport (bad roads, too much traffic, bad public transport)
- Large house prices or rent - this can make it more difficult to move
- Imperfect information about jobs in other areas
- Family and Social ties
- The financial costs of moving home
- Cultural and language barriers

Watch: Factor Immobility

Overcoming Market Failure

1. **Government Provision**
    - Where "missing markets" exist (national defence/street lighting) the government will step into provide.
    - Governments will also provide merit goods (goods/services that the government thinks people will under-consume which have positive externalities attached to their consumption (education)
        - **Advantage**
            - People get essential services
        - **Disadvantage**
            - There is often a disincentive in these markets to innovate due to the lack of competition from private businesses

2. **Price controls**
    - Price controls are government-mandated legal minimum or maximum prices set for specified goods. They are usually implemented as a means of direct economic intervention to manage the affordability of certain goods.
    - For example, in Ireland Irish Rail has a monopoly on rail transport and must seek approval from the Minister for transport before raising prices.

- **Advantage**
  - The advantage is that they will lead to lower prices for consumers.
- **Disadvantage**
  - The disadvantage is that it will lead to lower supply. If firms get a lower price, there may be less incentive to supply the good

- **Watch:** Price Ceilings and Price Floors
- **Watch:** Price Controls to fix Market Failure
- **Read:** Rent Controls in Berlin and more analysis here

3. **Regulatory Bodies/Prohibiting mergers**
   - The Consumer and Competition Protection Commission regulates mergers and acquisitions in Ireland to ensure that markets remain competitive For large mergers and acquisitions they may refer the case to the European Commission who have the power to decide whether they newly formed business will enjoy too much market dominance. The EU Commission prevented the acquisition of Aer Lingus by Ryanair as it would have given Ryanair a monopoly position on European flights from Ireland.
     - **Advantage**
       - Regulatory bodies ensure fair competition to ensure that the consumer is not exploited by the actions of private businesses.
     - **Disadvantages**
       - The costs associated with establishing and running the regulatory body

4. **Legislation**
   - To overcome market failure, the government may place laws and regulations which prohibit certain behaviour and actions. Regulations can limit or prevent:
     - Demerit goods (alcohol, drugs, smoking)
     - Use of goods with negative externalities (burning of coal)
     - Abuse of monopoly power.
     - Exploitation of labour – minimum wage
     - **Advantage**
       - Legislation ensures consumers make decisions with full information.
       - It prevents monopolies abusing their power
       - It protects employees from exploitation in labour markets
     - **Disadvantage**
       - The costs associated with creating and enforcing the legislation

   - **Watch:** Regulation and Market Failure

5. **De-regulation**
    - In the case where a monopoly is already State controlled, such as An Post, it may be necessary to engage in deregulation to enable it to become more efficient. Deregulation could be used to bring down barriers to entry and open up a previously state controlled industry to competition, as has happened with the Telecom Eireann in 1998. While the telecoms market has had regulations removed to open it up to competition, regulation of individual firms still takes place through Comreg.
        - **Advantage**
            - Deregulated markets encourage competition generally lead to broader choice and better prices for consumers.
        - **Disadvantage**
            - Consumers have to put more resources into deciding the best option for them.

6. **Nationalisation**
    - Bringing the monopoly under public control – which is referred to as 'nationalisation'. The ultimate remedy for an abusive monopoly is for the State to take a controlling interest in the firm by acquiring over 50% of its shares, or to take it over completely. The monopolist can still be run along commercial lines, but be made to operate as though the market were competitive.
        - **Advantage**
            - Supply at a fair price for the consumer is guaranteed
        - **Disadvantage**
            - Nationalised companies are often plagued with inefficiencies and require bailing out by the exchequer.
    - **Watch:** Nationalising Britain's Railways

7. **Taxes on Negative Externalities**
    - Taxes on negative externalities (pigouvian taxes) are intended to make consumers/producers pay the full social cost of the good. If a good has a negative externality, without a tax, there will be over-consumption because people ignore the external costs.
    - A Pigouvian tax is a tax on any market activity that generates negative externalities.
        - **Advantage**
            - Fosters market efficiency because the external costs are born by the producer/consumer of the good/service
            - Discourages harmful activity
            - Generates Government Revenue
        - **Disadvantage**
            - Hard to measure the external cost therefore it can be difficult to levy the tax appropriately.
            - Political viewpoints/lobbying often means that demerit goods are not levied appropriately

- **Watch:** Indirect Tax to Solve Negative Externalities with Consumption

8. **Subsidies on positive externalities**
   - Subsidies involve the government paying part of the cost to the firm or assisting the consumer in purchasing; this reduces the price of the good and should encourage more consumption. In a free market, people ignore the positive externalities of consumption, e.g. when cycling to work, you don't consider the reduction in pollution your decision creates (external benefits). For example the Bike-to-work scheme or the subsidy for purchasing an electric vehicle
     - **Advantage**
       - Used to alter producer/consumer behaviour for the benefit of society
     - **Disadvantage**
       - **Distortion of the market -** for example subsidies distort the trade in goods and services and can curtail the ability of LDCs to compete in the markets of rich nations
       - **Financial Cost -** Subsidies can become expensive in the long run – note the opportunity cost.
       - **Who pays and who benefits –** the cost of the subsidy may fall on consumers who derive no benefit from the subsidy
       - **Encouraging inefficiency -** Subsidy can artificially protect inefficient firms who need to restructure – i.e. it delays much needed reforms.

   - **Watch:** Subsidies and Market Failure

9. **Nudges**
   - A Nudge is a technique used by choice architects in order to change someone's behaviour in a very easy and low-cost way, without reducing the number of choices available. We often see it described as "non-enforced compliance". Choice Architects (policy makers) aim to change people's behaviour and alter their decisions more effectively using a nudge rather than relying on fresh pieces of legislation or direct enforcement. It has been described as "libertarian paternalism". Nudge theory is generally used to describe situations where nudges are used to improve the life and wellbeing of people and society.
   - The introduction of compulsory calorie counts on menus in Ireland doesn't force people not to pick unhealthy food, but it nudges people towards making healthier choices.
     - **Advantage**
       - No financial cost for the government in changing consumer behavior.
     - **Disadvantage**
       - The lack of financial incentive means not all consumers will change their behavior.
     - **Watch:** A brief history of nudges

10. Government Policy & Campaigns

- Policies to reduce unemployment – policies to overcome market failures, such as geographical and occupational immobilities.
- Campaigns: Government campaigns to change people's preferences or behaviours like "Quit.ie" to encourage people to give up smoking.

11. Labour Market Policies to tackle immobility

- **Government Policies that influence the Geographical Mobility of Labour**
  - **Housing**
    - Increase the availability of affordable housing in those areas of shortages.
  - **Educational facilities**
    - Improve the availability of educational facilities to ease concerns of parents.
  - **Social infrastructure.**
    - Improve the social infrastructure so as to make the areas more appealing for families e.g. shops, parks, leisure facilities.
  - **Supports by Government.**
    - The government might provide adequate supports so as to entice people to move e.g. help with re-location costs etc.
  - **Information / Knowledge**
    - Provide up-to-date information on the possibilities of moving. Improve knowledge on the opportunities available for mobility.

- **Government Policies that Influence Occupational Mobility**
  - **Education/Training courses.**
    - Provide courses for further education opportunities and at costs accessible to workers.
    - Provide opportunities for training / retraining at times / costs suitable for workers.
  - **Removal of Government Barriers**
    - Change regulations on work permits; on access; Solas Training schemes; remove unnecessary language / cultural barriers.
  - **Trade Union Barriers**.
    - Reduce barriers to entry into occupations e.g. NUJ, Equity; Irish Hospital Consultants.