Edexcel Economics (A) A-level

Theme 1: Introduction to Markets and Market Failure

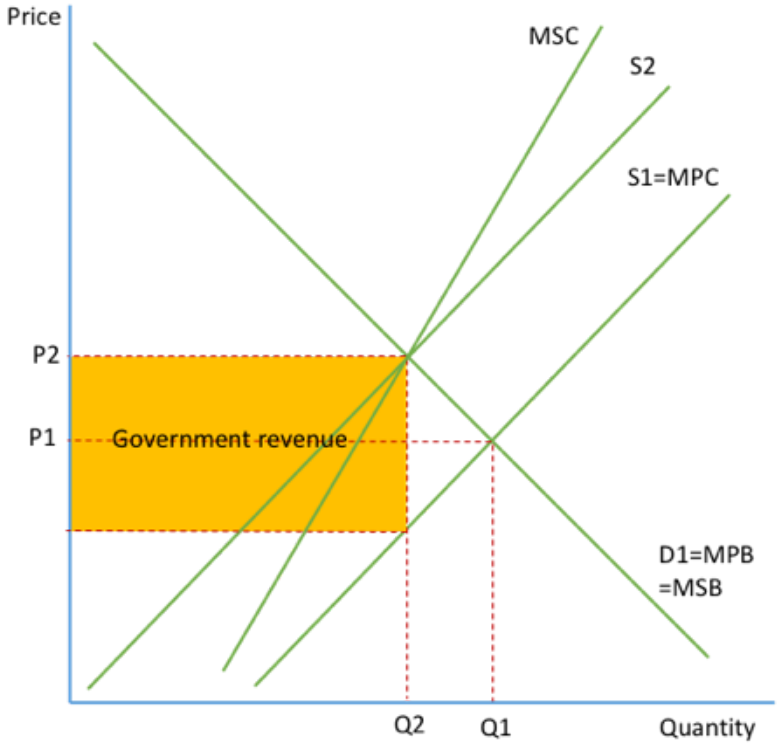
1.4 Government Intervention

Detailed Notes

1.4.1 Government intervention in markets

Indirect taxation:

When the good has a negative externality, the government can introduce indirect taxation to prevent market failure. This will cause a fall in supply and increase the costs to the individual, so the supply curve/MPC curve will shift from S1 to S2. The free market would produce at P1Q1, where MPC=MPB, but the social optimum position is P2Q2, where MSB=MSC. Following the introduction of the tax, the equilibrium position is S2=MPB=MSB, at P2Q2. The tax internalises the externality and social welfare is now maximised.
This diagram shows a specific tax but an ad valorem tax could also be introduced, which would have the same effect, but the shift of the curve would look slightly different.



Advantages:

- It internalises the externality- the market now produces at the social equilibrium position and **social welfare is maximised.**
- It raises **government revenue**, which could be used to solve the externality in other ways such as through education. This may help goods to become more elastic in the long run. The effect will depend on what the government does with the revenue they raise.

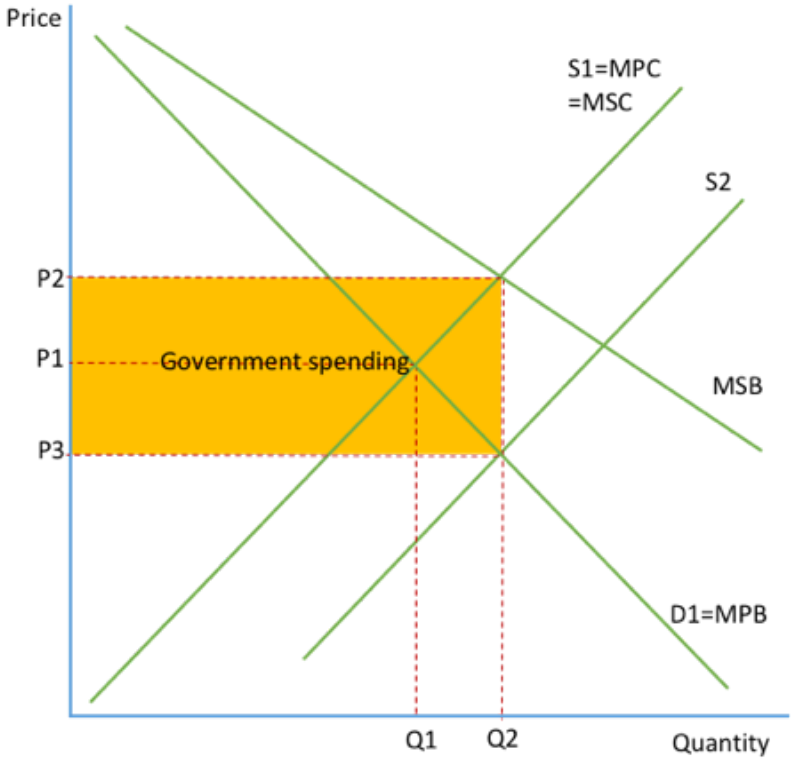
Disadvantages:

- It is difficult to know the size of the externality and so it is **difficult to target the tax**; the effect depends on where the tax is set. The government suffers from imperfect information when setting the tax.
- There could be **conflict** between the government goal of raising revenue and solving the externality, which makes setting the tax difficult.
- It could lead to the creation of a **black market**
- If demand for the good is inelastic, then the tax will be ineffective at reducing output.
- Taxes are **politically unpopular** and so governments may be reluctant to introduce them.
- They are **regressive**, meaning they the poor spend a larger proportion of their income on indirect taxes than the rich do.

Some examples of indirect taxes used for externalities in the UK are: landfill taxes, fuel duties, alcohol duties, tobacco duties, air passenger duties and sugar taxes.

Subsidies:

In order to solve positive externalities, the government can introduce subsidies. Subsidies can also be introduced in order to fix information gaps. This will shift the supply curve/MPC=MSC curve from S1 to S2 as it will lower the cost of production. The free market would produce where MPC=MPB at Q1P1 whilst the social optimum position is where MSC=MSB at P2Q2. The introduction of the subsidy means that the equilibrium point is Q2P3, at the social optimum output. This means that social welfare is maximised since the market produces at the output that best allocates resources.



Advantages:

- Society reaches the social optimum output and **welfare is maximised**.
- They can have **other positive impacts**, such as encouraging small businesses, bringing about equality and encouraging exports.

Disadvantages:

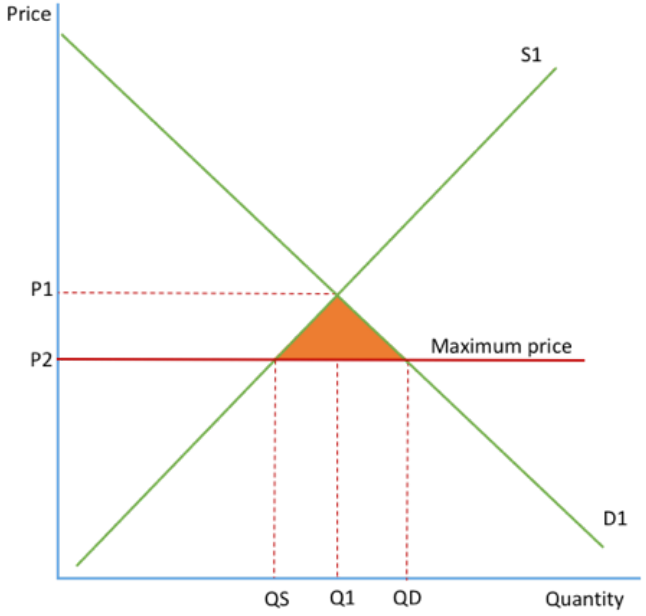
- The government has to spend a large amount of money, which will have a **high opportunity cost**.
- As with taxes, they are **difficult to target** since the exact size of the externality is unknown.
- Subsidies can cause producers to become **inefficient**, especially if they are in place for a long time.
- Once introduced, subsidies are **difficult to remove**.

Some examples of subsidies are those on: biofuels, solar panels, apprenticeship schemes, wind farms and rail industries.

Maximum and minimum prices:

For a maximum price to have an effect, it must be set below the current price equilibrium. For a minimum price to have an effect, it must be above the current price equilibrium.

A **maximum price** is a legally imposed price for a good that the suppliers cannot charge above. They are set on goods with positive externalities. For example, they are set on food as a lack of food will have a negative impact on the NHS. This approach has sometimes been applied to rents for accommodation when prices are too high. They can prevent monopolies from exploiting customers. The equilibrium position is P1Q1 but the imposition of the maximum price means there is excess demand of QD-QS, shown by the shaded area.



A **minimum price** is a legally imposed price at which the price of the good cannot go below. They can be set on goods with negative externalities, so that the price is raised to the social optimum point and consumption is discouraged. They also encourage producers to produce goods, so can be set on goods with social benefits that are underprovided by the market. In the diagram, the market equilibrium price is P1Q1. However, the minimum price is set at P2 and as a result QD is demanded but QS is supplied so there is excess supply of QS-QD, shown by the shaded area.

Advantages:

- They can be set where MSB=MSC, so allow for some consideration of **externalities**, and so help to increase social welfare.
- A minimum price will ensure that goods are affordable, whilst a maximum price will ensure that producers get a fair price. Both of these are able to **reduce poverty** and can increase equity/equality.

Disadvantages:

- There is a distortion of price signals and this causes **excess supply/demand**. Excess demand will lead to questions about how to allocate goods and excess supply will lead to questions about what to do with the surplus goods.
- It is **difficult for the government to know where to set the prices**, because of the difficulty of knowing the size of externalities and because it will have implications on the size of excess supply/demand.
- Both can lead to the creation of **black markets**. Maximum prices may also lead to illegal bribes or discriminatory policies in allocating goods.

Maximum prices have been implemented in Manhattan in the from of rent controls on properties. On top of this, there are price caps on milk, toilet paper, medicine, petrol and

other key goods in Venezuela: this has led to the creation of a black market and the goods are no longer sold in supermarkets as the firms are unable to make a profit at those prices.

In Scotland, a minimum price has been imposed on alcohol. It targets the cheapest drinks, which aims to cut down on binge drinking, but it will have negative effects on poverty for those who are addicted. Minimum prices on Limousines in Nashville have stifled competition as the most price competitive firms are forced out of business.

A **buffer stock scheme** is where both maximum and minimum prices are implemented at the same time. This is often the case with agricultural products whose prices fluctuate massively, such as in the EU Common Agricultural Policy. The government will buy up the excess supply when the equilibrium price is below the minimum price and sell their stock to meet the excess demand when price exceeds the maximum price. This helps to prevent price fluctuation and provides stability but causes inefficiency and places a large cost on the government. Often, prices remain below the minimum price since farmers produce as much as they can as they know the government will buy whatever they produce at the minimum price.

Tradable pollution permits:

A pollution permit allows the owner to pollute up to a specific amount of pollution and the government controls how many permits there are so limits the maximum amount of pollution. Companies have to buy permits in order to pollute so, in an attempt to cut costs and increase profits, companies may use greener technology. Unused permits can be sold to other companies, hence why they are tradeable. Companies exceeding their limit of pollution will face legal action. As a fixed supply of permits is allocated, an increase in demand will lead to an increase in price for the permits, so companies will have more incentive to cut emissions by using green technology.

This example shows how tradable pollution permits are a cheaper way to cut pollution:

- There are three firms: Firm A produces 70 units of pollution, B produces 80 and C produces 50. To reduce pollution, it will cost A £20/unit, B £25/unit and C £10/unit.
- The government decides it wants to reduce pollution to 120 units so gives 40 unit permits to each firm. If each firm was to just reduce their pollution to 40 units it would cost (£20x30) + (£25x40) + (£10x10) = £1700.
- However, the permits are tradable. Firm B will decide to buy more permits for anything up to £25/unit because this will make it cheaper than actually reducing their pollution, A will buy it for anything up to £20 and C will sell it for anything more than £10. As firm B bid the highest, firm C will sell their 40 units permits to firm B. After this, firm A can produce 40 units (it will cost them £20x30=£600 as they have to reduce by 30 to become legal), B can produce 80 units (costing them £20x40=£800 if we assume they bought the permits from C for £20) and C will produce 0 units (costing them £10x50=£500, but they gain £800 from firm B buying their permits). Overall, the total cost of reducing pollution without permits will be £600 + £500= £1100.

Advantages:

- Since the government caps the number of permits, it is **guaranteed that pollution will fall** to the targets set by the government. This will maximise social welfare.
- The government can **raise revenue** by selling permits and by fining firms who exceed their pollution limit.
- This encourages companies to use and invest in **green technology.**
- Firms are able to make their own decisions about whether to cut pollution or buy more permits. This helps encourage **efficiency,** as seen by the numerical example (this is not necessary in an exam but helps to understand the concept).

Disadvantages:

- This can be **expensive to monitor and police**, but it will only work if it is monitored well. The government needs to impose fines that are large enough to ensure firms follow the regulation.
- It will **raise costs** for businesses, and it is likely that these higher costs will be passed onto consumers
- It may be difficult to know **how many permits** the government should allow.

One successful example is the US Sulphur trading scheme, which reduced sulphur dioxide by 40%. The EU Emissions Trading Scheme (ETS) was launched in 2005 and it represents a 21% reduction in greenhouse gases. Since then, other greenhouse gases like nitrous oxide have been included and the scheme has been extended to the airline industry. The permit scheme has also been introduced in China.

State provision of public goods:

Public goods are non-excludable and non-rivalry and so the free rider problem says they will be under-provided by the free market, leading to market failure. As a result, the government provides these public goods directly through taxation. Similarly, the government can provide merit goods.

Advantages:

- This **corrects market failure** by providing important goods which would otherwise not be provided. It will lead to improved social welfare.
- It can help to bring about **equality,** by ensuring everyone has access to basic goods.
- There will be **benefits of the goods themselves**, for example by providing healthcare, the government ensures that the workforce is healthy and so this can improve economic growth.
- By using competitive tenders (looked at in Theme 3), the government can ensure efficiency.

Disadvantages:

- This is **expensive** and represents a **high opportunity cost** for the government. Administration costs are a problem
- Since the market is not involved, the government may produce the **wrong combination of goods** as consumers can not indicate their preferences. For example, there may be too many soldiers and too few hospital beds: if they were provided by the market, price signals would lead to a shift in resources. Democracy aims to reduce this problem, since consumers can vote for political parties whose aims are similar to their own.
- The government may be **inefficient** at production since they have no incentive to cut costs.
- Government officials may suffer from **corruption and conflicting objectives**.

In the UK, the government provides a number of goods including roads, education and healthcare. The NHS suffers from severe underfunding and many schools are having their budgets cut. Moreover, more money is spent on improving railways than roads, even though 92% of all journeys in the UK are made on roads, suggesting incorrect resource allocation.

Provision of information:

When there is asymmetric information, the government provides information to allow people to make informed decisions. They may also force companies to provide information.

Advantages:

- This helps consumers to act **rationally,** which allows the market to work properly.
- It is best if the government uses this **alongside other policies**. For example, it can make demand more elastic in the long run and so help indirect taxes to become more effective at reducing output.

Disadvantages:

- This can be **expensive** for the government to do, incurring an opportunity cost.
- The government themselves may not always have all the information, so it may be difficult to inform consumers.
- Consumers may **not listen** to the information provided due to irrational behaviour.

Some examples of information provision are labels on cigarette packages and information campaigns on speeding, obesity, drinking and smoking. Consumer protection laws and industry standards help to overcome problems relating to second hand products. The ‘traffic light system’, where foods are rated green, orange or red on calories, sugar, salt etc. helps to easily show consumers the healthier options. Despite these information campaigns, many consumers still undertake harmful and dangerous activities.

Regulation:

Governments are able to impose laws and caps to ensure that levels are set where MSB=MSC or to ensure that companies provide full information on products. The government can also introduce regulatory bodies such as OFCOM for communications and OFGEN for energy. These ensure firms follow regulation and do not exploit their customers or take advantage of market position.

Advantages:

- This can ensure consideration of externalities, prevent exploitation of consumers and keep consumers fully informed. This will help to **overcome market failure** and maximise social welfare.

Disadvantages:

- Laws may be **expensive** for the government to monitor, incurring an opportunity cost.
- They don't take into account the different costs of following the laws for different companies. Compared with tradable pollution permits, regulation is a **less efficient** method of reducing pollution.
- The government can suffer from **regulatory capture** (looked at in Theme 3).
- Firms may **pass on costs** to the consumer in the form of higher prices.
- Excessive regulation may reduce competition in a market and efficiency, by increasing bureaucracy and reducing innovation.

A number of regulations are in place to correct market failure in the UK such as: EU fishing quotas, smoking bans, minimum ages laws and maximum vehicle CO_2 emissions.

Synoptic point:

Government intervention in individual markets often has macroeconomic consequences. It will clearly impact the government budget, as the government will either raise revenue or spend money be undertaking these policies. Policies which push business costs up, for example indirect taxes, regulation and tradable pollution permits, will reduce international competitiveness and LRAS.

1.4.2 Government failure

Government failure:

Government failure is when government intervention in the market leads to net welfare loss and a misallocation of resources. The total social costs arising from the intervention are greater than the social benefit. There are a number of causes of government failure:

Distortion of price signals:

- Some types of government intervention change price signals in the market and distort the free market mechanism. As a result, they keep some companies in business when they are inefficient so the resources should be switched to somewhere else (subsidies) or make consumers pay too much for a good (taxes).

- For example, subsidies keep farmers in employment when they cannot produce cheaply enough to be competitive. The result is that the government keeps them in business when they should close down and find an alternative use for their resources.

- Maximum and minimum prices lead to excess demand/supply and make it difficult to allocate resources.

- The price mechanism aims to allocate resources to their best use and where consumers want and value them most highly. By intervening, the government distorts the mechanism and so resources may be allocated inefficiently.

Unintended consequences:

- Some interventions cause effects which the government did not intend to happen. Consumers and producers may react to new policies in unexpected ways and so the policy doesn't have the effect it should.

- One example is the introduction of the buffer stock scheme CAP (Common Agricultural Policy) in the EU. This was meant to smooth out the price fluctuations but it ended up leading to overproduction in the EU and a fall in agricultural prices in other parts of the world as EU surpluses were disposed of at cheap prices outside of Europe; this was not the intention of the scheme.

- On top of this, targets for treating patients on the NHS has led to a reduction in the quality of care. This is not what the government intended when they introduced the targets.

Excessive administration costs:

- In many cases, a lot of money that is allocated by the government is actually used up on basic administration costs. The social costs may be higher than social benefits, once administration costs are taken into account.

- A lot of money given to the NHS etc. is actually spent on organisational adminstration rather than putting the money into medical care.

- Excessive administration on the Apprenticeship Levy, which aims to increase the quality and quantity of apprenticeships, has meant that little money is spent by firms.

Information gaps:

- Any decisions that the government makes must be based on some data but the information they have is always going to be limited, for example you cannot accurately predict the number of cancer patients or the number of cars on the road.

- Cost and benefit forecasts of investment are often wrong and so the government invests in a system where the costs are higher than the benefits, so there is welfare loss. It is impractical, and usually impossible, for the government to get every piece of information they need.