

OCR Economics A-level **Microeconomics**

Topic 2: The Role of Markets

Market failure: Environment

(Please note: This is not required knowledge for the 2019 syllabus, but is a useful example of market failure)

Notes

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The three functions of the environment

- **Provider of resources**

The environment supplies resources which are then used to produce goods, such as wheat, oil and natural gas.

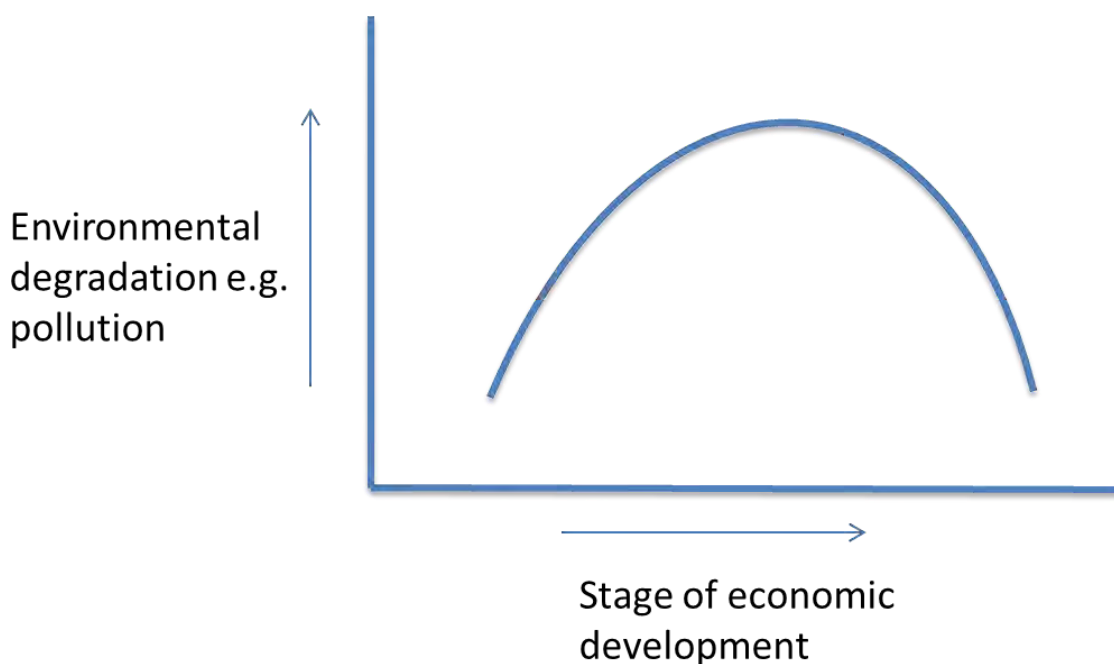
- **Provider of amenities**

An amenity is something which is useful or desirable. For example, the countryside is considered to be pleasant and a nice, clean park increases utility. A clean environment can contribute to a higher standard of living.

- **Absorber of waste**

Production processes generate waste, which is then absorbed by the environment. The environment helps with the disposal of waste.

The environmental Kuznets curve



This shows the relationship between increasing income or a more advanced economy, and environmental degradation. Initially, production and manufacturing leads to high levels of pollution and environmental damage, but after a point, higher incomes lead to an improvement in the environment.

Evaluate whether economic growth will result in environmental degradation/resource depletion and limit sustainable development

Sustainable development is when the stock of natural resources does not decline over time. It allows the needs of the present generation to be met without compromising the ability of future generations to meet their needs.

High and fast levels of economic growth could mean that production levels are high. This could use a lot of natural resources, such as coal, oil and natural gas. There could also be deforestation. However, governments might try and implement policies to reduce this depletion.

Evaluate the effectiveness of policies used to reduce the rate of environmental degradation/ resource depletion at a local, national, regional and global level:

- **Indirect taxation and subsidies**

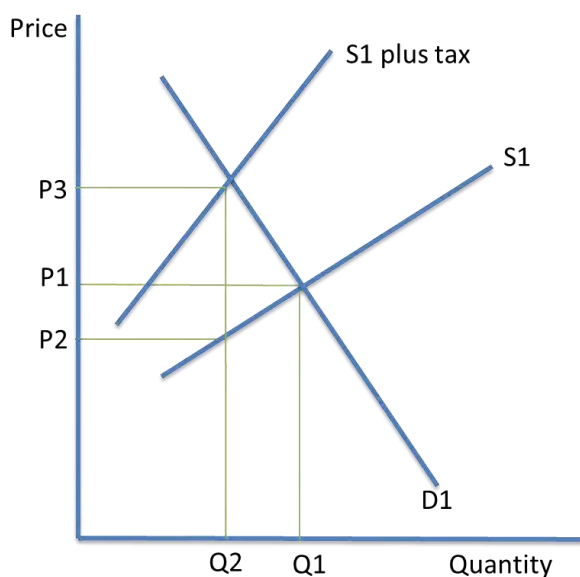
Indirect taxes:

Indirect taxes are taxes on expenditure. They increase production costs for producers, so producers supply less. This increases market price and demand contracts. They could be used to discourage the production or consumption of a demerit good or service. For example, the government could impose a £100 tax per unit of production if it is harmful to the environment.



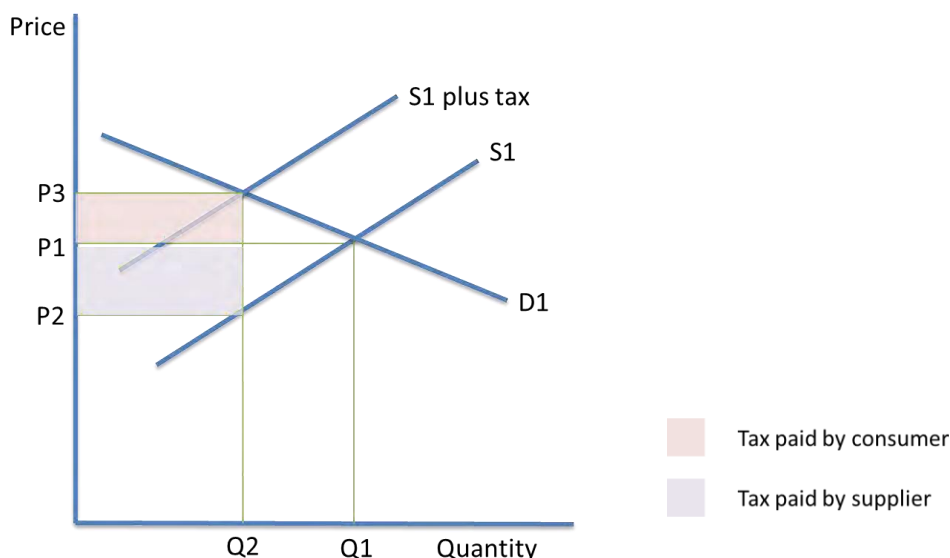
 There are two types of indirect taxes:

- **Ad valorem** taxes are percentages, such as VAT, which adds 20% of the unit price. This is the main indirect tax in the UK.




- The incidence of tax might fall differently on consumers and producers. Producers could make consumers pay the whole tax ($P3 - P2$), or if they feel this would lower sales and lose them revenue, they could choose to pay part of the tax. Producers might pay $P1 - P2$, whilst consumers might pay $P3 - P1$.
- The incidence of the tax depends on the price elasticity of demand of the good. For cigarettes, since the demand is fairly price inelastic, consumers might have the larger burden of tax.
- This should, in theory, discourage consumption of the demerit good and reduce negative externalities.
- Government revenue from ad valorem taxes is larger if demand is price inelastic. This is because demand falls only slightly with the tax.
- **Specific taxes** are a set tax per unit, such as the 58p per litre fuel duty on unleaded petrol.










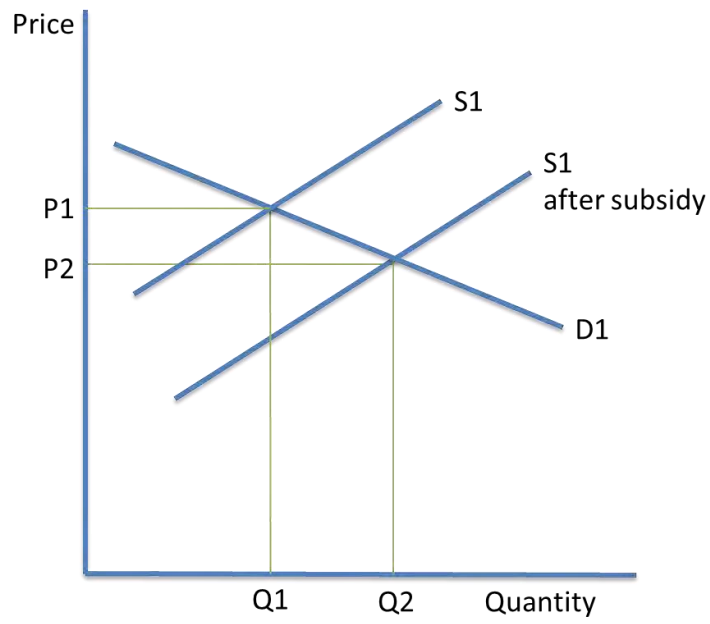
- The more inelastic the demand, the higher the tax burden for the consumer, and the lower the burden of tax for the producer.

 Indirect taxes could reduce the quantity of demerit goods consumed, by increasing the price of the good. If the tax is equal to the external cost of each unit, then the supply curve becomes MSC rather than MPC, so the free market equilibrium becomes the socially optimum equilibrium. This **internalises the externality**. In other words, the polluter pays for the damage.

Subsidies:

-  A subsidy is a payment from the government to a producer to lower their costs of production and encourage them to produce more.
-  Subsidies encourage the consumption of merit goods. This includes the full social benefit in the market price of the good. Therefore, the external benefit is internalised.
-  For example, the government might subsidise recycling schemes so it is cheaper for consumers to recycle waste, which will yield positive externalities for the environment.
-  The supply curve shifts to the left. More of the merit good is produced and the price falls from P1 to P2.
-  The vertical distance between the supply curves shows the value of the subsidy per unit.





- 📖 Consumers gain more from the subsidy when demand is price inelastic, whilst producers supply more when demand is price elastic.
- 📖 The disadvantages of subsidies include the opportunity cost to the government and potential higher taxes, the potential for firms to become inefficient if they rely on the subsidy and government failure, if they subsidise less efficient industries.

- **Legislation and regulation, including environmental standards**





- 📖 The government could use laws to ban consumers from consuming a good. They could also make it illegal not to do something.
- 📖 If there was a compulsory recycling scheme, it would be difficult to police and there could be high administrative costs. Bans could be enforced for environmentally harmful goods, although they can still be consumed on the black market.
- 📖 Firms which fail to follow regulations could face heavy fines, which acts as a disincentive to break the rule.
- 📖 It could raise costs of firms, who might pass on the higher costs to consumers.

- **Tradable pollution permits**



- 📖 These could limit the amount of negative externalities, in the form of pollution, created in industries. Firms will be allowed to pollute up to a certain amount, and any surplus on their permit can be traded.
- 📖 This means firms can buy and sell allowances between themselves.
- 📖 For example, there could be a limit on the quantity of carbon dioxide emissions released from the steel industry.
- 📖 **Advantages**
- 📖 This should benefit the environment in the long run, by encouraging firms to use green production methods.
- 📖 The government could raise revenue from the permits, because they can sell them to firms. This revenue could then be reinvested in green technology.
- 📖 If firms exceed their permit, they will have to purchase more permits from firms which did not use their whole permit. This raises revenue for greener firms, who might then invest in green production methods.




Disadvantages

-  However, it could lead to some firms relocating to where they can pollute without limits, which will reduce their production costs.
-  Firms might pass the higher costs of production onto the consumer.
-  Competition could be restricted in the market, if the permits create a barrier to entry for potential firms.
-  It could be expensive for governments to monitor emissions.



○ **Information provision**

-  By providing information, governments can ensure there is no information failure, so consumers and firms can make informed economic decisions.
-  For example, governments might make consumers and firms more aware about the consequences on the environment of their economic decisions. This might involve more widely available recycling schemes, for example.

○ **Government expenditure**

-  Governments could spend money on projects such as wind farms. This can help divert the economy away from dependence on non-renewable resources and towards sustainable and renewable resources, such as wind power.

○ **Public and private partnerships**

-  If the public sector and the private sector collaborate, there could be more sustainable production.
-  For example, Marks and Spencer and Somerset County Council made a five year partnership in 2010 to encourage households to recycle more. This reduced the quantity of waste sent to the landfill and it lowers costs for M&S.

