

## AS Economics Unit 2 Markets why they fail 03 January Mark scheme

Q1 (a) (i) Using a diagram, explain the concept of 'positive externalities'. (8)

Positive externalities (external benefits) are the divergence between social benefits and private benefits (1) and accrue to third parties who are neither buyers nor sellers in a transaction (1) Producers (eg, farmers) compare their own private costs (MPC), (such as rent, equipment, livestock, labour, etc.) with their private benefits (MPB) i.e., revenues (2), ignoring the external benefits that might accrue to others (MSB-MPB) (2)

(ii) With reference to Extract 1, identify and explain two examples of positive externalities in agriculture. (4)

Environmental benefits: the 'countryside' - flora and fauna  
Securing food supplies: in case of drought, disruption of food imports, war, etc.

Sustaining poor rural communities: helping 'essential' but low income rural households

Preservation of cultural traditions: Morris dancing, well-dressing, fox hunting, village fetes, etc., etc. (2 x 2)

(b) (i) Explain what is meant by government failure.

Government intervention leads to worse economic outcomes than if no such intervention had taken place

Government intervention disrupts and distorts market forces and causes a misallocation of resources

Government intervention to correct market failure lead to greater inefficiency in the utilisation of resources

Award 2 marks for any reasonable definition

(c) With reference to Figures 3 and 4 and other knowledge, examine why agricultural subsidies might result in government failure.

Agricultural subsidies distort price, trade and behaviour, at huge cost. Price-related subsidies cause domestic prices to rise. Farmers are protected from competition and consumers do not enjoy its benefits. Taxes have to be higher to meet the cost of the subsidies.

Direct payments to farmers encourage them to invest in land and in farm equipment. Farming becomes more productive. Farm output grows and increased supply leads to lower prices, and farmers are no better off than they were to begin with (unless government is pledged to a policy of agricultural price support).

Environmentalists argue 'that the ecological balance is being upset, turning the countryside into another 'industry' with loss of amenity and untold costs arising from 'unnatural' production . Arguments in favour of extensive farming are equally compelling. But public attitudes are ambivalent (Figure 1)

Figure 3 shows that EU subsidies cost EU taxpayers \$ 1 00bn in 1997; the cost was about \$55bn in the USA and just under \$50bn in Japan. Without the subsidies, taxes could have been lower or tax revenue could have been spent on other things (opportunity cost).

EU subsidies are much greater than those of the USA or Japan. This helps to explain the data in Figure 4 that shows the EU

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prices of a number of agricultural products to be well above world prices (260% in the case of sugar). EU residents lose out twice: firstly, in higher taxes and, secondly, in higher prices.

Award up to 10 marks for two arguments (6 + 4 or 5 + 5) depending on the quality of the analysis and evaluation, but subject to a maximum of 7 marks if the answer ignores either the passage or the figures.

(6) Outline two possible external costs of intensive farming (6)

Mass production/standardisation and loss of rare breeds/ varieties of fruit and vegetables as well as of taste and flavour

Use of chemicals and insecticides, etc. and damage to flora and fauna and the environment generally as well as diseases (BSE, foot-and-mouth, salmonella)

Grubbing up hedgerows, increasing size of fields and less access to countryside for walkers, naturalists, ramblers, 'the public'

Costs (within CAP) of subsidies in terms of higher taxes, dearer food, and less money for other types of public spending

Award three marks for each point (2 x 3) bearing in mind that there may be many other examples and that some degree of subjectivity in answers is almost inevitable

In what ways might the introduction of a system of tradeable obligations be 'somewhat similar to pollution permits'? (10)

Pollution permits

Government sets an annual pollution level (reduced each year). Each firm can be allocated a permit to emit a certain amount of pollution. Cleaner firms can sell permits to polluting firms.

Pollution permits have something to offer both 'cleaner' producers (manufacturers) and 'polluters', and provide an incentive for firms to reduce their pollution

Tradeable obligations

Government sets a level of non-intensive farming for each farm. If a farmer cannot or does not wish to meet this target/obligation he can pay another farmer to take over the obligation. Such a system offers choices to both intensive and non-intensive farmers, and allows the opportunity costs involved to be easily identified.

The amount of non-intensive farming would increase, because intensive farmers would either switch to non-intensive farming or pay non-intensive farmers to take up their obligation. The system enables efficient intensive farmers to continue with their chosen farming methods, but it does oblige them to subsidise/pay other farmers to employ non-intensive methods. It is assumed that efficient non-intensive farmers would be the main beneficiaries.

Similarities and differences

Both systems work through market forces and, it is claimed, distort trade very little, and certainly much less than taxes or subsidies. Tradeable obligations are completely transparent and easy to operate. Apart from administrative and inspection costs, there would be no burden upon taxpayers. Evidence from the USA, following the US Clean Air Acts, suggests that pollution permits may be costly to administer, unsuitable in a local neighbourhood if a big firm buys up permits, and that firms may refuse to sell permits in order to create a barrier to entry

Award up to 10 marks for a well reasoned on the basis of (5 + 5 or 6 + 4), 10 subject to a maximum of 6 marks for an answer without evaluation.

Maximum of 5 marks if only pollution permits discussed

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2 (a)(i) With reference to Extracts 1 and 2, explain the meaning of external costs and outline two examples. (4)

External costs = divergence between private costs and social costs (1) which are experienced by a third party, i.e., a producer or consumer not directly involved in an economic activity (1)

Examples: congestion, queuing, pollution, poorer quality of life, higher costs/lower profits for firms (2 x 1 = 2)

(a) (ii) With reference to Figure 1 suggest why British roads have become increasingly congested.(6)

Generally, the use of road space has grown at a much faster rate than the supply of road space (2)

Increases have occurred in the number of licensed vehicles and in the number of miles travelled, especially by cars and taxis (2)

Rail travel has declined and air travel is a very small proportion of total travel (2)

Increases in the number of motorway miles and public road miles has been very small (2)

Award up to a maximum of 4 marks if no numerical data are quoted. Maximum of 4 marks if no reference to first bullet point

(b) Illustrating your answer with an appropriate diagram, explain how road pricing might reduce congestion.

Road-users compare their own private costs (MPC), such as journey time and fuel cost, with their private benefits (MPB), ignoring the external costs they impose on others (MSC - MPC),

Road pricing is intended to internalise the external costs, so that the decision to drive is based upon  $MSC = MPB$  rather than

$MPC = MPB$ , i.e.,  $OP_2/OT_2$  (2)

of road pricing is explained by use of D & S analysis, award 1 mark for a diagram and 1 mark for the written explanation.

(b)(ii) Analyse two advantages of using the price mechanism to reduce road congestion (8)

Congestion charges use the price mechanism to ration a scarce resource (road-space) and can do so on a variable basis, taking into account peak times and distinguishing between busy and less busy roads.

Payment by road-users would reflect the time and route of their journeys, thus encouraging them to travel off-peak and to use less busy routes.

They might also be encouraged either to make fewer journeys (and reduce pollution) or to use alternative transport modes, such as rail.

The revenue generated by congestion charges can be used for a variety of purposes. It could be employed for the building, maintenance and repair of road space or to improve public transport facilities; it could be used to fund other types of public expenditure unconnected with roads and traffic.

The examples above may be overlapped or conflated. Award up to 8 marks on the basis of 4 + 4 or 5 + 3 depending upon the quality of the analysis.

(c) Examine two disadvantages of using fuel taxes to regulate road use. (6)

Fuel taxes (i.e., the present system) are criticised for being a tax

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on distance travelled and for having little impact upon the decision to travel, because demand is price inelastic and public transport alternatives are often poor

They operate mainly as a means of raising revenue for the government (i.e., petrol is essential and demand is price inelastic); they are regressive in that no account is taken of road users' incomes; despite changed conditions attached to company cars, fuel taxes may be absorbed by businesses as a tax deductible expense

They are indiscriminate as to time of day and road conditions and provide no extra incentives for avoiding peak hours and busy roads; they are a blunt (and largely ineffective) instrument, and the case for their full or partial replacement by road-pricing has been strongly argued by transport economists and others

They increase firms' transportation costs and the prices of goods  
Allowing for overlapping arguments, award up to 6 marks on the basis of 3 + 3 or 4 + 2 depending on the quality of the discussion

(d) Evaluate the likely effectiveness of the following means of reducing road congestion:

improving the provision of public transport

Improving the provision of public transport is likely to require infrastructure investment and/or operating subsidies

The extra costs might be funded from general taxation or from hypothecated congestion charges

Increased spending on public transport might result in cuts in other areas of public expenditure

Public transport can never offer the convenience afforded to road users by the ownership of private cars (door-to-door travel,

privacy, no timetable restrictions, etc.) and may undermine the continued success of out-of-town shopping centres and other facilities dependent upon access by private cars

If improvements were successful in reducing the amount of road use by private vehicles then benefits might flow in the form of fewer accidents, less stress, less pollution, reduced expenditure on road building and road maintenance and improved/cheaper road use for non-passenger transport

Award up to 5 marks provided that arguments both for and against are considered and evaluated

a programme of building new roads

Building new roads will be very expensive and could be funded in a number of different ways: higher general taxation which would not be to the advantage of non-road users; an increase in current fuel taxes and the road fund licence, which might be unselective as well as generally unpopular; road-pricing which would be selective and would enable road-users to pay for their use of roads

Benefits would accrue to both businesses and private road users in terms of higher average speeds/shorter journey times/less congestion/lower transportation costs/improved efficiency/greater productivity, etc., with knock-on effects from lower business costs for consumers

However a critical view of this strategy is expressed in Extract 2: building new roads encourages more road use; imposes additional environmental costs upon society; and a legacy of 'unending concrete' for future generations'

Award up to 5 marks provided arguments both for and against are considered and evaluated