Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2011

Economics

Assessment Unit AS 1

assessing

Markets and Prices

[AE111]

TUESDAY 31 MAY, AFTERNOON

MARK SCHEME

General Marking Instructions

This mark scheme is intended to ensure that the AS examinations are marked consistently and fairly. The mark scheme provides examiners with an indication of the nature and range of candidate responses likely to be worthy of credit. It also sets out the criteria which they should apply in allocating marks to candidates' responses. The mark scheme should be read in conjunction with these general marking instructions which apply to all papers.

Quality of candidates' responses

In marking the examination papers, examiners will be looking for a quality of response reflecting the level of maturity which may reasonably be expected of 17-year-olds, which is the age at which the majority of candidates sit their AS examinations.

Flexibility in marking

The mark scheme is not intended to be totally prescriptive. For many questions, there may be a number of equally legitimate responses and different methods by which the candidates may achieve good marks. No mark scheme can cover all the answers which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner for the paper concerned.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for valid responses rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected for 17-year-old candidates. Conversely, marks should only be awarded for valid responses and not given for an attempt which is completely incorrect or inappropriate.

Types of mark schemes

Mark schemes for questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication. These questions are indicated on the cover of the examination paper. Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

Questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the "best fit" bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

Threshold performance: Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

Intermediate performance: Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

High performance: Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Making calculations

In marking answers involving calculations, examiners should apply the "own figure rule" so that candidates are not penalised more than once for a computational error.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all questions that require them to respond in extended written form. These questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication. Where the quality of candidates' economics is not matched by the quality of written communication, marks awarded will not exceed the maximum for Level 2 in questions which have three levels of response or the maximum for Level 3 in those which have four levels of response.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is limited.
Level 2: Quality of written communication is satisfactory.
Level 3: Quality of written communication is of a high standard.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Limited): The candidate makes only a limited attempt to select and use an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Satisfactory): The candidate makes a reasonable attempt to select and use an appropriate form and style of writing, supported with appropriate use of diagrams as required. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning evident.

Level 3 (High Standard): The candidate successfully reflects and uses an appropriate form and style of writing, supported with the effective use of diagrams where appropriate. Relevant material is organised with a high degree of clarity and coherence. There is widespread use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

AVAILABLE
MARKS

1   UK roads heavily congested

(a) •   UK has 8 km of motorway per billion vehicle km
   •   Germany has 19 km of motorway per billion vehicle km
   •   Canada has 54 km of motorway per billion vehicle km
   •   Germany has over two times as many km of motorway per billion vehicle km as the UK
   •   Canada has almost seven times as many km of motorway per billion vehicle km as the UK
   •   UK has the least km of motorway per billion vehicle km of the countries shown.

Level 1 ([1]–[2])
Candidate provides little comparison of the UK motorway network with those of Germany and Canada. Quality of written communication is limited.

Level 2 ([3]–[4])
Candidate provides some comparison of the UK motorway network with those of Germany and Canada. Quality of written communication is satisfactory.

Level 3 ([5]–[6])
Candidate provides an extensive comparison of the UK motorway network with those of Germany and Canada. Quality of written communication is of a high standard.   [6]

(b) The source identifies two reasons for the increase in road traffic growth:
   •   the increased affordability of cars brought about by higher earnings, generous credit facilities and greater competition in the car market
   •   people are living further and further from their workplace and therefore need to travel longer distances to work
   •   other reasons may include:
       –   increased cost of public transport such as rail
       –   concerns over comfort, reliability and scope of public transport
       –   changing work patterns means that a car is necessary to carry out a job or get to work
       –   increased prevalence of out of town shopping centres.

Level 1 ([1]–[2])
Candidate shows little understanding the factors which may have led to the increase in road traffic. At this level the candidate may simply quote directly from the source without explaining how these factors are likely to increase road traffic. Quality of written communication is limited.

Level 2 ([3]–[4])
Candidate shows some understanding of the factors which may have led to the increase in road traffic. Quality of written communication is satisfactory.

Level 3 ([5]–[6])
Candidate shows clear and comprehensive understanding of the factors which may have led to the increase in road traffic. At this level the candidate will identify a number of factors and will provide a clear explanation of how these factors have led to the increase in road traffic. Quality of written communication is of a high standard. [6]

(c) The government could raise revenue from motorists in a number of different ways:
- VAT and excise duties on fuel
- VAT on the purchase of a new car
- vehicle excise duty
- fines for motoring offences – parking or speeding tickets
- road user charges – e.g. tolls.

Level 1 ([1]–[2])
Candidate shows little understanding of the methods a government could use to raise revenue from motorists. Quality of written communication is limited.

Level 2 ([3]–[4])
Candidate shows some understanding of the methods a government could use to raise revenue from motorists. Quality of written communication is satisfactory.

Level 3 ([5]–[6])
Candidate shows clear and comprehensive understanding of the methods a government could use to raise revenue from motorists. Quality of written communication is of a high standard. [6]

(d) In a market system price plays an important function in sending signals to producers telling them what goods and services to produce and in what quantities. It is through this signalling function that consumers are able to express their preferences for particular goods and services. Free market economists believe that this price mechanism is the most efficient method of allocating scarce resources.
Because an effective market does not exist in UK transport there are no price signals upon which governments can make investment decisions. As a result governments often allocate resources inefficiently. The source states that of the £32 bn raised from road users only £8 bn is spent on the road network despite the fact that 84% of passenger travel is undertaken by car. Railways on the other hand receive £6.5 bn annually despite only 6% of passenger travel occurring by train.

Level 1 ([1]–[2])
Candidate shows little understanding of how the absence of price signals make it difficult for government planners to allocate transport expenditure efficiently. Quality of written communication is limited.

5

Level 2 ([3]–[4])
Candidate shows some understanding of how the absence of price signals make it difficult for government planners to allocate transport expenditure efficiently. Quality of written communication is satisfactory.

Level 3 ([5]–[6])
Candidate shows clear and comprehensive understanding of how the absence of price signals make it difficult for government planners to allocate transport expenditure efficiently. Quality of written communication is of a high standard. [6]

(e) An external cost occurs whenever the activity of one economic agent has a negative effect on the well being of a third party. Examples include pollution and congestion with the estimated cost of congestion being £21bn per year.

[2] for accurate definition
[2] for appropriate example, [1] if example is not relating to car usage [4]

(f) Those in favour of a huge expansion of the motorway network argue that it is needed to reduce the congestion on UK roads. They argue that this congestion is having a negative impact on economic growth and quality of life. They argue that financing this expansion through road user charges will ensure that those who use the roads most will pay most and therefore the external costs of road use will be internalised.

Those opposed to an expansion of the motorway network argue that it will have huge environmental consequences and may actually encourage more car use.

Issues for analysis and discussion include:
- congestion is costing UK economy £21bn per year
- congestion is a deterrent to FDI
- congestion impacts on the quality of life with the average person spending 5.4 days stuck in traffic
- UK has one of the smallest motorway networks in the EU
- environmental impact of motorway construction
- opportunity cost of funding the motorway expansion particularly if it is funded by government
- building motorways will encourage more people to drive and therefore will create more pollution and eventually more congestion
- if the motorway is funded by the introduction of road pricing it will mean that those who create the most congestion will pay the most
- road pricing could reduce congestion as drivers will make less unnecessary journeys
- road user charges are regressive and therefore hit the poorest hardest
- use of appropriate diagrams.

Level 1 ([1]–[4])
Candidate shows little understanding of the arguments for and against the proposal for a huge expansion of the motorway network. There is no significant evaluation of the issues and quality of written communication is limited.

Level 2 ([5]–[8])
Candidate provides some understanding of the arguments for and against the proposal for a huge expansion of the motorway network. There is a degree of evaluation and quality of written communication is satisfactory.

Level 3 ([9]–[12])
Candidate provides a clear and comprehensive understanding of the arguments for and against the proposal for a huge expansion of the motorway network. There is significant evaluation and judgement, and quality of written communication is of a high standard.   [12]

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2   **MPs call for minimum price on alcohol in an attempt to reduce binge drinking**

(a) Consumer surplus is defined as the difference between what a consumer is willing to pay for a good and the price they actually pay.

If a consumer is willing to pay £30 for a good but the market price of the good is £20 then the consumer earns a welfare bonus of £10. This welfare bonus is known as consumer surplus.

Consumer surplus can be shown on a diagram. It is equal to the area under the demand curve above the price line.
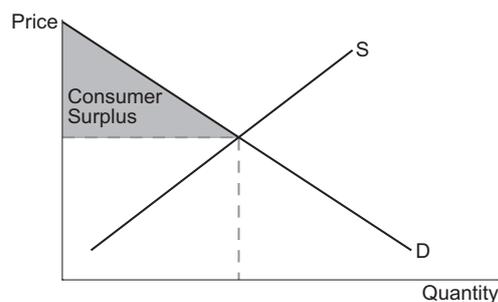
Level 1 ([1]–[3])
Candidate shows little knowledge or understanding of consumer surplus. There is at best a seriously flawed definition and little development through relevant examples, diagrams or technical language. Quality of written communication is limited.

Level 2 ([4]–[7])
Candidate shows some knowledge or understanding of consumer surplus. There is a credible definition though this may contain minor errors and some development through relevant examples, diagrams or technical language. Quality of written communication is satisfactory.

AVAILABLE MARKS

Level 3 ([8]–[10])
Candidate shows clear and comprehensive knowledge or understanding of consumer surplus. There is an accurate definition and extensive development through relevant examples, diagrams or technical language. Quality of written communication is of a high standard.   [10]

(b) Producer surplus is defined as the difference between what a producer is willing to supply a good for and the price they actually receive.

If a producer is willing to supply a good onto the market for £10 but the market price is £20 then this producer will earn a welfare bonus of £10. This welfare bonus is known as producer surplus.

Producer surplus can be shown on a diagram. It is equal to the area above the supply curve below the price line.

The introduction of a minimum price per unit of alcohol, set above the equilibrium price, will lead to a reduction in consumer surplus and an increase in producer surplus as shown in the diagram below.

Consumer surplus before the minimum price is equal to area ABC. Consumer surplus after the minimum price is imposed is equal to area AFE.

Producer surplus before the minimum price is equal to area BCD. Producer surplus after the minimum price is imposed is equal to area EFGD.
The introduction of the minimum price leads to a deadweight welfare loss of FBG.

Clearly if the minimum price was set below the equilibrium, it would have no impact on consumer or producer surplus.

AVAILABLE
MARKS
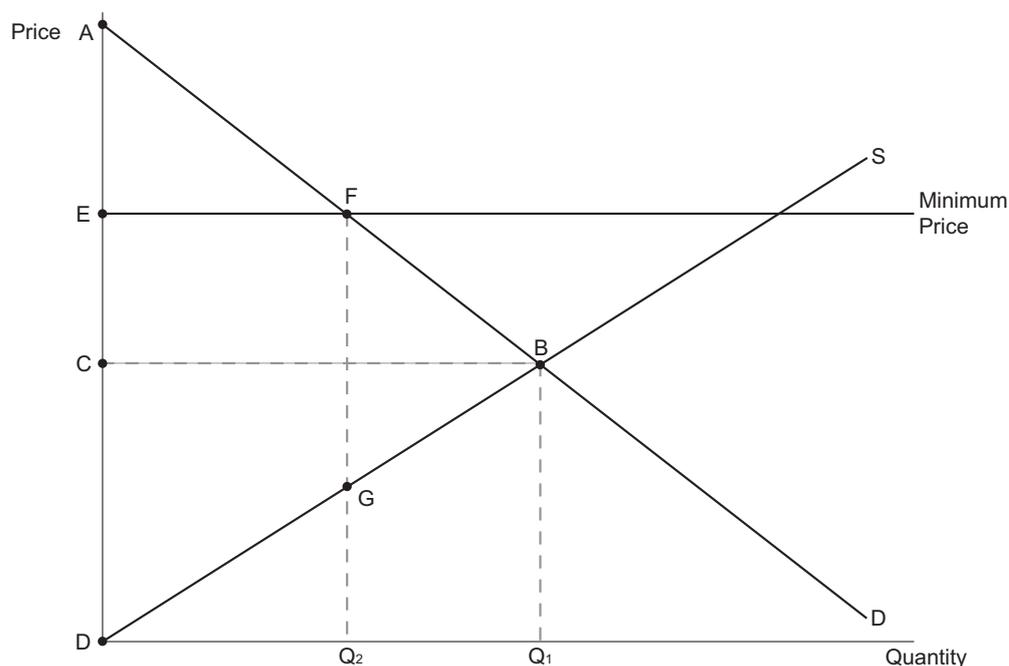
Issues for analysis and discussion include:
- impact on consumer and producer surplus
- impact on individuals who consume alcohol
- impact on breweries, supermarkets, pubs and off licences
- discussion of welfare loss
- relevant diagrams.

Level 1 ([1]–[5])
Candidate provides little analysis of the impact of a minimum price per unit of alcohol on economic welfare. At this level a candidate may discuss some of the wider implications of a minimum price such as non-compliance and enforcement problems without focusing on its impact on consumer and producer surplus. There are few if any relevant examples and diagrams will be non-existent or seriously flawed. Quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some analysis of the impact of a minimum price per unit of alcohol on economic welfare. There are some relevant examples, perhaps supported by a relevant, if slightly flawed, diagram. Quality of written communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides clear and comprehensive analysis of the impact of a minimum price per unit of alcohol on economic welfare. There is significant development through examples and or flawless diagrams. Quality of written communication is of a high standard.   [15]

(c) There are a range of alternative policies the government could use to reduce binge drinking and the over-consumption of alcohol. These include:
- increased taxation
- increasing the age restriction for the purchase of alcohol
- reducing the number of licensed premises
- reducing licensed hours
- education about the dangers of alcohol consumption
- complete prohibition.

Issues, analysis and areas for discussion include:
- revenue raised through higher taxation
- difficulty in enforcing restrictions on the sale of alcohol
- success or otherwise of education campaigns
- inefficiency of government intervention
- historical examples
- relevant examples
- impact of policies on those who drink sensibly
- relevant diagrams.

9

Level 1 ([1]–[5])
Candidate displays little understanding of the range of policy options open to government to reduce binge drinking. There is no significant evaluation of the issues and quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some understanding of the range of policy options open to government to reduce binge drinking. There is a degree of evaluation and quality of written communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides a clear and comprehensive understanding of the range of policy options open to government to reduce binge drinking. There is significant evaluation and judgement and quality of written communication is of a high standard. [15]

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3 **Government demands greater value for money from its spending**

(a) A public good is a good (or service) which has two characteristics:
1. It is **non-rival**: This means that consumption by one person does not reduce the amount available for consumption by another person. The provision of street lighting illustrates the concept of non-rivalry, because if one person uses the light provided by the street light it does not prevent another person from benefiting from the light.

2. It is **non-excludable**: This means that once the good/service is provided no person can be excluded from benefiting. Using the example of street lighting again, once the light is provided no person on that street can be prevented from using it.

To be classified as a public good the good/service must be both non-rival and non-excludable. Goods/services which are either non-rival or non-excludable but not both are classified as quasi-public goods.

Level 1 ([1]–[3])
Candidate shows little knowledge or understanding of the term public good. There is at best a seriously flawed definition and little development through relevant examples or technical language. Quality of written communication is limited.

Level 2 ([4]–[7])
Candidate shows some knowledge or understanding of the term public good. There is a credible definition though this may contain minor errors and some development through relevant examples or technical language. Quality of written communication is satisfactory.

Level 3 ([8]–[10])
Candidate shows clear and comprehensive knowledge or
understanding of the term public good. There is an accurate definition
and extensive development through relevant examples or technical
language. Quality of written communication is of a high standard.   [10]

(b) Merit goods are goods which in a paternalistic sense the government
believe we should consume. The consumption of a merit good such as
education by one economic agent will often confer positive externalities
on society and therefore would be under-valued and under-consumed if
provided through the market.

This is illustrated on the diagram below where the social benefit
of consumption (MSB) is greater than the private benefit (MPB).
Since rational economic agents only consider their own private
benefit they will not consider the social benefit and therefore the free
market will lead to consumption Q_1 which is below the socially optimal
level Q_2.
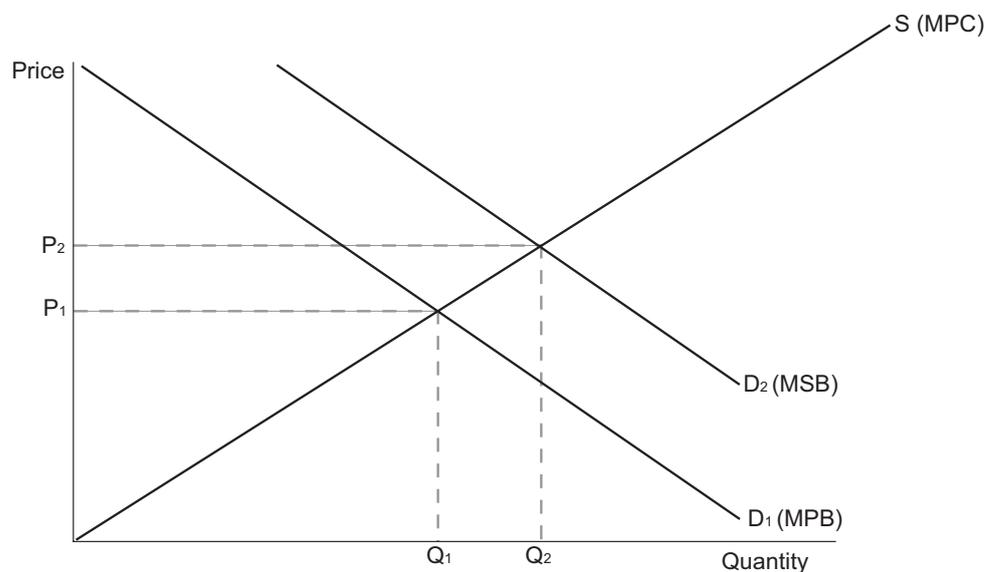
Alternatively, merit goods may be under-valued and under-consumed
due to a lack of information on the part of the person consuming the
good. Some people may not be fully aware of the benefits involved in
consuming a good such as education or may simply discount the
benefits since they are likely to occur some time in the future.

Issues, analysis and areas for discussion include:
• discussion of external benefits associated with education
• discussion of future internal benefits associated with education
• distinction between MPB and MSB
• analysis of information failure
• reference to market failure
• appropriate diagrams
• appropriate examples.

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AVAILABLE
MARKS

Level 1 ([1]–[5])
Candidate provides little explanation of how the free market leads to
the under-consumption of merit goods such as education. No attempt is
made to represent this in a diagram or if an attempt is made it will
contain significant errors. There is no significant economic analysis and
quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some explanation of how the free market leads to
the under-consumption of merit goods such as education. An attempt is
made to represent this in a diagram but it may contain some minor
errors. There is a degree of economic analysis and quality of written
communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides a clear and comprehensive explanation of how the
free market leads to the under-consumption of merit goods such as
education. A clear and accurate diagram is drawn. There is significant
economic analysis and quality of written communication is of a high
standard.   [15]

(c) There are a number of policies that governments could use to improve
the quality of education. These include:
- investing in the school building infrastructure
- reducing class sizes
- investing in ICT and new technologies
- increasing pay to attract high quality graduates into teaching
- investing in staff training
- creating competition between schools and widening parental
  choice
- using targets to measure school performance
- closing failing schools
- using private sector expertise to run schools (academies)
- leaving education to the free market
- linking failing schools with successful schools
- changes to school curriculum
- use of financial incentives for both teachers and pupils (EMA,
  performance related pay).

Issues, analysis and areas for discussion include:
- appropriate examples
- cost (including the opportunity cost) of investing more money in
  state education
- distorting effects of target setting – Goodharts law
- ethical concerns regarding private sector involvement in education
- difficulty in comparing school performance.

AVAILABLE
MARKS

Level 1 ([1]–[5])
Candidate shows little understanding of the policies governments could use to improve the quality of education. There is no significant evaluation of the issues and quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some understanding of the policies governments could use to improve the quality of education. There is a degree of evaluation and quality of written communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides a clear and comprehensive understanding of the policies governments could use to improve the quality of education. There is significant evaluation and judgement, and quality of written communication is of a high standard.   [15]

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4   Estimates of elasticity are largely ignored

(a) Income elasticity of demand measures how responsive quantity demanded is to a change in income. YED is measured by the formula

$$\frac{\text{\% change in Qd}}{\text{\% change in income}}$$

Appropriate development:
- definitions
- reference to real GDP as a measure of income
- relevance of numerical values
- appropriate examples
- reference to normal or inferior goods
- reference to necessities and luxuries.

Level 1 ([1]–[3])
Candidate shows little understanding of the term income elasticity of demand. There is no significant development and quality of written communication is limited.

Level 2 ([4]–[7])
Candidate shows some understanding of the term income elasticity of demand. There is a degree of development and quality of written communication is satisfactory.

Level 3 ([8]–[10])
Candidate shows clear and comprehensive understanding of the term income elasticity of demand. There is significant development and quality of written communication is of a high standard.   [10]

AVAILABLE MARKS

(b) Firms and governments can make use of income elasticity of demand in a number of ways. For example:
- firms can use estimates of income elasticity to estimate the potential future sales of its products. For example if YED = +4 and average incomes were expected to increase by 3% over the next year then the firm would know that, ceteris paribus, the demand for its goods would be likely to increase by approximately 12% over that period. This would help the firm make decisions on how many goods to produce and how many workers to employ
- this applies also to governments who may use estimates of YED to estimate future demand for health services, education, transport, etc.
- financial firms may use YED to determine their share portfolio or investment decisions. E.g. they may invest in defensive stock during recessions or periods of low growth
- governments also use YED estimates when analysing the likely impact of tax changes on a particular sector of the economy
- governments may also use YED when deciding which industries to support through subsidy. E.g. to promote economic development government may encourage the production of income elastic products
- supermarkets use estimates of YED when deciding which products to stock and in which quantities. During the recent recession supermarkets such as TESCO reduced their stock of luxury products in favour of more income inelastic products.

Issues for analysis and discussion include:
- use of YED by firms in planning future production
- use of YED by governments when planning provision of services, e.g. future demand for air travel
- use of YED in portfolio management
- appropriate examples
- reference to normal or inferior goods, income elastic and income inelastic goods.

Level 1 ([1]–[5])
Candidate provides little explanation or analysis of the ways in which firms and governments make use of estimates of income elasticity of demand. There is no significant economic analysis or application, and quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some explanation or analysis of the ways in which firms and governments make use of estimates of income elasticity of demand. There is a degree of economic analysis and application, and quality of written communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides a clear and comprehensive explanation or analysis of the ways in which firms and governments make use of estimates of income elasticity of demand. There is significant economic analysis and application, and quality of written communication is of a high standard.

[15]

(c) Economists argue that all estimates of elasticity of demand (PED, YED, and XED) are useful to firms and governments; however, their usefulness should not be overstated. There are a number of potential problems with the values calculated.

- one problem is that estimates of elasticity vary with the time frame over which they are measured with most measures becoming more elastic the longer the time frame
- often the estimated values for elasticity of demand are calculated using past data. However, just because a 10% increase in income brought about a 20% increase in quantity demanded in the past does not mean that a further 10% increase in income will bring about a further 20% increase in quantity demanded. It must always be remembered that past performance can be a very poor indicator of future performance
- in addition not all goods have a set price. Some goods, e.g. tea, sugar are sold to consumers at different prices from different outlets, therefore when measuring XED or PED how do we measure the change in price? Do we take an average price? If so then this will surely affect the accuracy of the figure
- finally when calculating elasticity values, we use an assumption known as "ceteris paribus", which means "*all other things remain unchanged".* Therefore if we calculate XED = −4 we make the claim that a 10% increase in price of good A brought about a 40% decrease in quantity demanded of good B. However, in reality, the 40% decrease in quantity demanded of good B may have occurred for reasons other than the increase in the price of good A, e.g. bad publicity about the product, a decrease in income of consumers or a range of other factors.

For this reason using elasticity estimates to make predictions about what might happen in the future is fraught with difficulty.

Despite these problems, however, if used with caution and in conjunction with a range of other data, estimates of elasticity can prove to be very useful to firms and government.

Issues for analysis and discussion include:
- examples of how economists use XED, PED
- use of past data
- ceteris paribus assumption
- difficulty in determining average price/income
- different methods of calculation – point, arc, etc.
- impact of timeframe on elasticity figures.

AVAILABLE MARKS

Level 1 ([1]–[5])
Candidate displays little understanding of the view that estimates of elasticity of demand are so inaccurate as to make them of little use in the real world. There is no significant evaluation of the issues and quality of written communication is limited.

Level 2 ([6]–[10])
Candidate provides some understanding of the view that estimates of elasticity of demand are so inaccurate as to make them of little use in the real world. There is a degree of evaluation and quality of written communication is satisfactory.

Level 3 ([11]–[15])
Candidate provides a clear and comprehensive understanding of the view that estimates of elasticity of demand are so inaccurate as to make them of little use in the real world. There is significant evaluation and judgement, and quality of written communication is of a high standard.   [15]

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Total   **80**