Skoolumy

CAMBRIDGE A LEVEL ECONOMICS TOPICAL ESSAY QUESTIONS

ELASTICITY OF SUPPLY

PAST QUESTIONS

1. (a) Explain what influences the price elasticity of supply of a product. [8]

(b) Discuss whether farmers will benefit from producing goods which have low price elasticities of demand and supply. [12]

2. The Market for Precious Metals

The prices of precious metals such as gold, platinum and palladium are determined by supply and demand. This can result in dramatic price changes. Fig. 1 shows their price movements, as index numbers, during 2002.

Precious metal prices

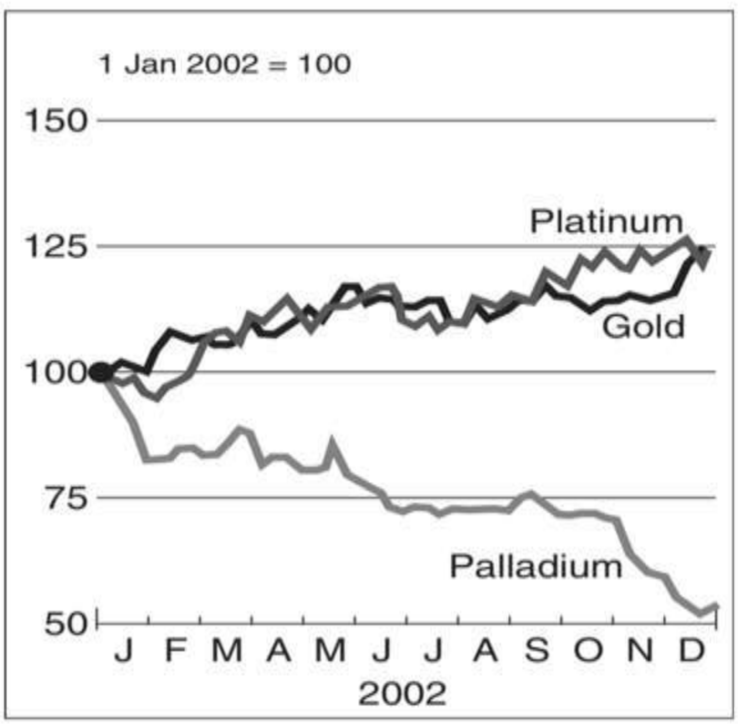


Fig. 1

Many influences were at work in the markets during this period. Demand for gold as an investment increased as economic conditions became uncertain, interest rates fell and stock markets collapsed. Platinum prices were affected by increasing sales of diesel cars, which must use platinum in their catalytic converters, and the reduction of exports of platinum by Russia. Supplies of precious metals can easily be increased from stocks, but when these are low it is more difficult to expand supply.

Palladium is a substitute for platinum in catalytic converters for cars using petrol (gasoline). Palladium and platinum prices have behaved very differently, as shown in Table 1.

Table 1 Prices of palladium and platinum (US$ per ounce)

	December 2000	January 2003
Palladium	US$ 1100	US$ 250
Platinum	US$ 600	US$ 700

South Africa is a leading supplier of precious metals. In 2002 gold and platinum made up 25% of its export earnings. The price changes of the metals helped push up the exchange rate of the South African currency by 40% against the US$.

(a) Define price elasticity of supply. [2]

(b) What does the data suggest about the nature of the price elasticity of supply of precious metals? [2]

3. Explain two factors that determine the price elasticity of supply of a manufactured product. [8]

4. (a) Explain two factors that are likely to make the supply of a product relatively price inelastic. [8]

(b) Discuss how governments might attempt to make the supply of an essential good more responsive to a change in its price and assess the likely effectiveness of such attempts. [12]

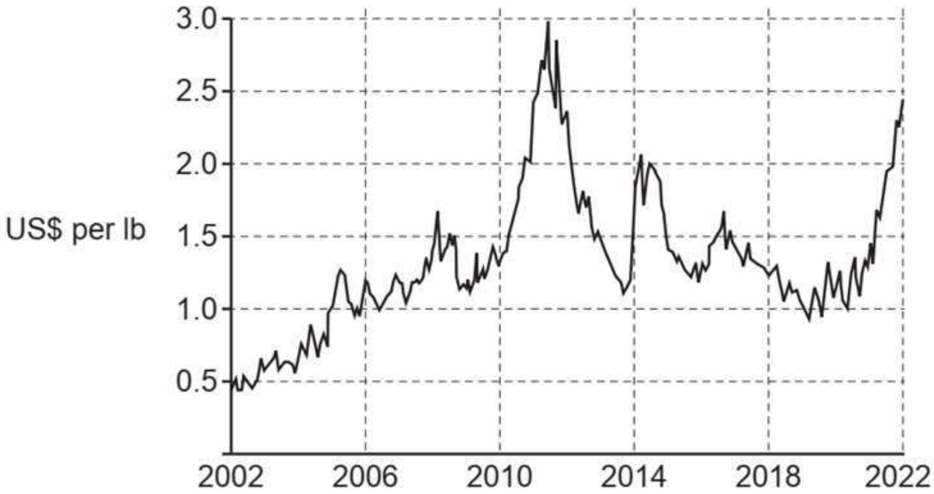
5. (a) Explain whether you would expect the price elasticity of supply of an agricultural product, such as rice, in a market to be elastic or inelastic. [8]

(b) Discuss the extent to which a government can increase the supply of an agricultural product to an economy in the short-run and in the long-run. [12]

6. Assess whether the supply of agricultural products is likely to be more price elastic or less price elastic than the supply of manufactured products. [12]

7. Global coffee bean prices reach a new high

Coffee is big business, especially in the United States (US). The global market was worth nearly US$110bn in 2020, with production around 10m tonnes of coffee beans. 95% of this production came from thousands of small-scale producers in South America, Central America, Asia and Africa. If present trends continue, production is forecast to triple by 2050. The Arabica coffee bean price was at a 10-year high in January 2022, having more than doubled in 2021. Fig. 1.1 shows the world price of coffee in United States dollars (US$) per pound (lb) weight. A pound is 454 grammes.



Source: tradingeconomics.com, 18 February 2022

Fig. 1.1: Arabica coffee bean price, 2002 to 2022

So how can this huge price increase be explained? The main cause was a series of weather events affecting Brazil, the world's largest producer of high quality Arabica coffee beans. Its market share is 35% of total global supply. There was severe drought in early 2021 that reduced the number of 'cherries', which contain the beans on coffee bushes. The crop yield was further damaged by frosts that followed the drought. As a result of these weather events, Brazil produced its smallest volume of quality coffee beans for ten years.

In addition, the production of cheaper low-quality Robusta coffee beans in Vietnam was badly affected by storms which stripped the bushes of their 'cherries'. Overall, there was a very large decrease in the global supply of all coffee beans.

Supply issues affecting major producing countries like Brazil and Vietnam mean that the volume of coffee beans produced regularly fluctuates between 'high' years and 'low' years. Producers try to reduce their risks through buffer stock schemes in order to maintain a regular income stream. This type of scheme is particularly important for the many small-scale subsistence producers who have no other source of income.

The dramatic weather events of 2021 have been exceptional, although a few large-scale producers in Brazil who survived the immediate impact of drought and frost should gain from the huge rise in the price of coffee beans. But what about the thousands of other producers elsewhere who lack power in the market? The most likely outcome is that they will once again become victims of the unpredictable global market for coffee beans.

Is the price elasticity of supply of coffee beans likely to be elastic or inelastic in any one year? Justify your answer from the information provided. [2]

8. The price elasticity of supply (PES) for a new smartphone is estimated to be 0.8 in the short run and 1.8 in the long run.

Explain what these estimates mean for producers and consumers of smartphones and consider why the estimates differ. [8]

MARK SCHEME

Table A: AO1 Knowledge and understanding and AO2 Analysis

Level	Description	Marks
3	• A detailed knowledge and understanding of relevant economic concepts is included, using relevant explanations. Explanations are supported by examples, where appropriate. • The response clearly addresses the requirements of the question and explains economic issues, and fully develops these explanations. • Analysis is developed and detailed and makes accurate and relevant use of economic concepts and theories. Where necessary, there is accurate and relevant use of analytical tools such as diagrams and formulae, and these are fully explained. • Responses are well-organised, well-focused and presented in a logical and coherent manner.	6–8
2	• Knowledge and understanding of some relevant economic concepts is included, using explanations and examples that are limited, over-generalised or contain inaccuracies. • The response addresses the general theme of the question and the relevant economic issues, with limited development. • Analysis is generally accurate with some development but little detail. Uses analytical tools such as diagrams and formulae where necessary. Use of these tools is partially accurate or not fully explained. • Responses are generally logical and coherent but are sometimes lacking in focus or organisation.	3–5
1	• A small number of relevant knowledge points are included and the response is limited by significant errors or omissions. • The response has little relevance to the question. • Analysis where provided is largely descriptive. Use of analytical tools such as diagrams and formulae, where necessary, may contain significant errors or be omitted completely. • Responses show limited organisation of economic ideas.	1–2
0	No creditable response.	0

Table B: AO3 Evaluation

Level	Description	Marks
2	• Provides a justified conclusion or judgement that addresses the specific requirements of the question. • Makes developed, reasoned and well-supported evaluative comment(s).	3–4
1	• Provides a vague or general conclusion or judgement in relation to the question. • Makes simple evaluative comment(s) with no development and little supporting evidence.	1–2
0	No creditable response.	0

1. (a) PES measures the responsiveness of supply to a change in price. Factors which influence it include the existence of spare capacity, availability of stocks, the time period involved and the mobility of factors.

For understanding price elasticity of supply up to 3 marks

For identifying some influences up to 3 marks

For explaining the influences up to 2 marks

(b) Supply is likely to be inelastic because of time lags and perishability while demand reflects necessity/substitutes and physical limits. Shifts in supply and demand cause major fluctuations in prices and affect income and planning. Increases in supply which lower price lead to falls in revenue. Against this inelastic demand maintains revenue when prices rise as supply falls. The latter only benefits farmers who manage to continue producing. Increases in efficiency can cause large falls in price and income. Uncertainty and risk avoidance often result. The impact of taxes and subsidies varies with elasticity.

For understanding inelasticity up to 3 marks

For applying inelasticity to the farming context up to 3 marks

For analysing the effects of inelasticity up to 3 marks

2. (a) A measure of the responsiveness of quantity supplied to a change in price

Exact (2), less precise or formula (1)

(b) With stocks (1) relatively elastic (1), or without stocks (1) relatively inelastic (1)

3. Knowledge and Understanding:

For a correct definition/formula of price elasticity of supply.

(up to 2 marks)

Candidates need to refer to the percentage/proportionate change in both Q and P to be awarded the second mark.

2 marks maximum

Application:

Application of one factor determining the price elasticity of supply of a manufactured product. (up to 3 marks)

(1 mark for identification of the factor and up to 2 marks for explanation)

Application of another factor determining the price elasticity of supply of a manufactured product. (up to 3 marks)

(1 mark for identification of the factor and up to 2 marks for explanation)

6 marks maximum

Guidance:
Factors affecting the price elasticity of supply of a manufactured product:

•the number of producers: many such products will be produced in a market with many producers, but this is not always be the case, e.g., a monopoly

•the existence of spare capacity: if there is spare capacity, PES will be more elastic than would otherwise be the case

•the ease of storing stocks: this should be easier with manufactured products than perishable products, so PES will be relatively elastic

•the time period: if more firms join the industry over time, PES will be relatively elastic

•the factor mobility: the easier it is to move resources into the production of manufactured goods, the more elastic PES will be

•the time taken to produce a product: the shorter the time, the more elastic supply will be

4. (a) For knowledge and understanding of the concept of elasticity of supply and the meaning of 'relatively price inelastic'. (up to 4 marks)

For application with two factors that might make supply relatively price inelastic e.g. the lack of stocks, the time period, the nature of the product, the availability of factors of production, the number of producers, the existence of spare capacity, the ease of storing stocks, the length of the production period and factor mobility. (up to 4 marks)

(b) For analysis of the ways in which governments might attempt to increase the elasticity of supply of a product for example buffer stock schemes to ensure the availability of stocks during shortages, training programs to increase the availability of labour with appropriate skills, providing loans for capital investment and financial incentives to promote research and development etc.

A subsidy on training will increase supply, i.e. shift the supply curve to the right, but will not necessarily increase supply elasticity. In order to make supply more elastic, candidates need to comment on how a subsidy would change the resources. (up to 8 marks)

For evaluation of the likely effectiveness of such policies, such as cost issues.

(up to 4 marks)

5. (a) For knowledge and understanding of price elasticity of supply including elastic and inelastic outcomes. (up to 4 marks)

Candidates need to show a firm grasp of the concept of price elasticity of supply. The formula is not required, but it is essential that an accurate explanation refers to the formula. The meaning of elastic and inelastic must be accurate for full marks.

For application of the factors that determine the coefficient, giving both elastic and inelastic outcomes. (up to 4 marks)

Application marks require candidates to demonstrate an understanding of the factors that lead to elastic and inelastic outcomes. These might include a reference to the time period under consideration, the availability of stocks, the availability of surplus capacity and the nature of the good. A good explanation of relevant factors is more important than an explanation of a range of factors. (8 marks total)

NB The question refers to ‘a product, such as rice’, but it is not necessary to refer to rice.

(b) For an analysis of the factors that might increase the supply of an agricultural product to an economy in the short-run and in the long-run. (up to 8 marks)

The government can adopt a number of policies to increase the supply of agricultural products. These include subsidies, increasing imports through, for example, exchange rate depreciation or bi-lateral trade agreements, increasing factors devoted to agricultural production and so on.

For evaluative comment on 'the extent to which' element of the question. (Up to 4 marks)

A number of points can be raised to score evaluative marks. For example, candidates might refer to the inelasticity of supply of agricultural products when appropriate resources in terms of land and labour are absent, so that the extent to which supplies can increase is limited. Accept any attempt to question the effectiveness of policies suggested in the analysis.

(max 12 marks)

NB The question explicitly refers to the role of a government in increasing the supply of an agricultural product.

6. AO1 and AO2 out of 8 marks. AO3 out of 4 marks.

Indicative content

Responses may include:

AO1 Knowledge and understanding and AO2 Analysis

A knowledge and understanding and analysis of possible factors affecting the PES of agricultural products and manufactured products, including:

• the number of producers

• the existence of spare capacity

• the ease of storing stocks

• the time period

• the extent of factor mobility

• the length of the production process.

Answers should analyse how PES is affected by each of these, with a clear distinction between the two types of products.

Level 1 responses will be assertive and lacking in explanations/mainly descriptive and/or mainly lacking in relevance to the question.

Level 2 responses may contain some inaccuracies and will be one-sided. Analysis will be explained at least in part and will be largely relevant to the question.

Level 3 responses will consider alternative policies/concepts etc. and will be balanced. Explanations of points raised will be offered and will be accurate and relevant to the question.

AO3 Evaluation

• Evaluation of whether the supply of agricultural products is likely to be more price elastic or less price elastic than the supply of manufactured products.

• In conclusion, PES for agricultural products is likely to be less elastic than the PES for manufactured products.

Accept all valid responses.

A one-sided response cannot gain any marks for evaluation.

AO1 Knowledge and understanding and AO2 Analysis 8

AO3 Evaluation 4

7. Inelastic (1) (accept perfectly inelastic)

Reference to any one of the climatic problems referred to in the text such as drought and frosts in Brazil or storms in Vietnam meaning that supply is volatile/unpredictable. The candidate may refer to the nature of agricultural goods meaning that you cannot simply grow additional output.

The explanation must refer to how it affects the responsiveness of supply (1).

8.

• up to 3 marks for AO1 Knowledge and understanding up to 3 marks for

AO2 Analysis

• up to 2 marks for AO3 Evaluation.

AO1 Knowledge and Understanding (max 3 marks)

Meaning of price elasticity of supply (1) an accurate formula (1) an explanation of what is meant by elastic/inelastic based on the responsiveness of changes in supply to changes in price (1).

AO2 Analysis (max 3 marks)

Analysis of why the values may differ due to e.g., the time period, level of stock, changes in the production process etc. Up to 2 marks for each reason explained. Maximum of 3 marks overall

AO3 Evaluation (max 2 marks)

An assessment as to why the impact on consumers and producers may differ according to these different estimates e.g., on availability, pricing and investment decisions.

AO1 Knowledge and understanding 3

AO2 Analysis 3

AO3 Evaluation 2