



“Investing in Africa’s future”

COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

NMPM 220: PUBLIC SECTOR ECONOMICS

END OF SEMESTER EXAMINATION

NOVEMBER 2022

LECTURER: G Mandewo

DURATION: 3 HOURS

INSTRUCTIONS

Choose and answer **ONLY FOUR (4)** questions in this Question paper and each question consist of 2

Total possible mark is 100

Start each question on a new page in your answer Booklet. Credit will be awarded for logical, systematic

There is a total of six (6) questions, and 6 pages (including this cover sheet). Marks for each question are

Use of non-programmable calculator is permitted

Best wishes!!

DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO BEGIN THE EXAM

1. (a) Discuss controversies over what to do with current surpluses **(5 mark)**
 (b) What is an unsustainable debt? **(5 mark)**
 (c) Discuss possible burden of the budget. **(5 mark)**
 (d) Demonstrate a clear understanding of the following taxes
 (i) Ad-Valorem Taxes **(2 mark)**
 (ii) Incidence taxes **(2 mark)**
 (iii) capital gains tax **(2 mark)**
 (iv) Surtax **(2 mark)**
 (v) Withholding tax **(2 mark)**

2. (a) Indicate whether each of the following statements is consistent with Organic or mechanistic view of government:
 (i) An economy could not function effectively if there were no property rights (the rules defining the ownership of property). Without property rights, it would not be possible to enforce a prohibition against theft. **(2 mark)**
 (ii) If someone claims something must be done in “national interest”, besides referring to welfare for individuals. **(2 mark)**
 (iii) In spite of the tempting and logical thesis that government is actually unnecessary and that we might live in either anarchy or spontaneous order, it is hardly worthwhile urging the abolition of government or the state – or indeed of constantly testing out its legitimacy (Friedrich Hayek – The Road to Serfdom) **(2 mark)**

- (b) What are the two types of methods in measuring the size of government and state their main possible limitation. **(6 marks)**

- (c) What is Pareto efficiency? Clearly, explain the three conditions that must be met for it to hold. **(5 marks)**

- (d) State and interpret the first Theorem of welfare economics. **(6 marks)**

- (e) State any three major items of government Revenue Heads collected in Zimbabwe **(4 marks)**

- 3 (a) Define the concept of pure public good and provide a classical example of it. **(3 marks)**

- (b) State and briefly explain the two features or characteristics of public goods **(4 marks)**

- (c) There are only two consumers in this market for a public good. They have individual Demand curves D_1 and D_2 respectively. Now, imagine that individual A and B are choosing commodity Y (a private good) and a commodity X (a public good). Once again, the price of commodity Y is set equal to \$1. Individual A has a very flat demand for commodity X (a public good), s(he) is willing to pay only \$2 for the first commodity of X and \$1 for the fifth good of X. Individual B has a steeper demand and is willing to pay

\$4 for the first good of X and \$2 for the fifth good of X. With the aid of clearly labelled graphs, demonstrate and explain market demand for the public good and its optimal provision. (Hint draw individual demand curve for A and B and then finally draw for the market)

(12 marks)

(d) What is the main condition for the optimal provision of public goods? **(1 mark)**

(e) Define a free rider problem and explain why this is a main efficiency concern with regard to the provision of public goods. How can governments respond to these problems emanating from the free rider problem? **(3 marks)**

(f) Decide whether each of the following statements is true or false. You do not need to discuss or justify your answer.

(i) Public goods are a form of externality

(1 mark)

(ii) Optimal provision of a public good occurs when marginal cost is set equal to each individual's Marginal Rate of substitution (MRS).

(1 mark)

4 (a) Discuss any four main rationales for income redistribution

(12 marks)

(b) Define expenditure incidence and state one reason that makes it difficult to determine

(2 marks)

(c) What is Lorenz curve and Gini coefficient and what do they measure. With the aid of figures, explain how Gini coefficient is interpreted **(3 marks)**

(d) Outline the key arguments against in-kind transfers compared to cash from the recipients' point of view as well as government's point of view. **(4 marks)**

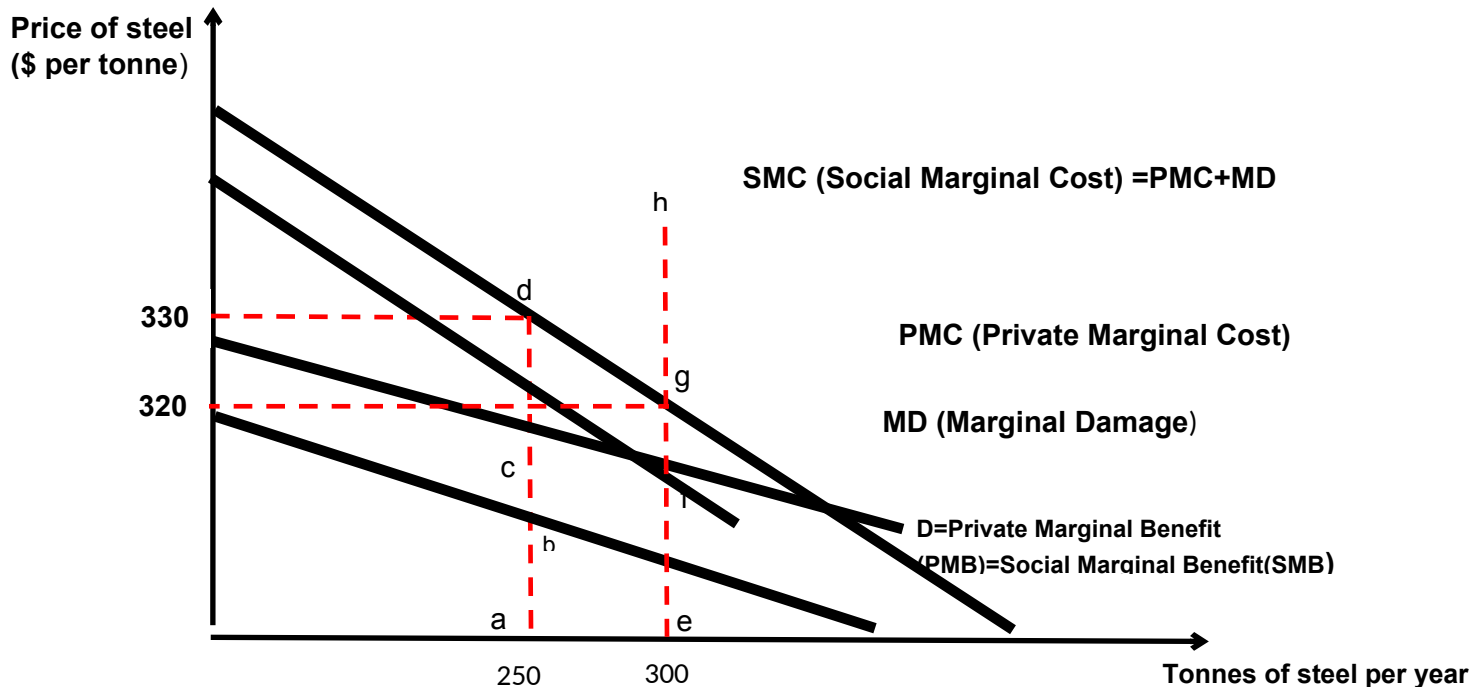
(e) If the in-kind transfers are less satisfactory than cash from the both recipients' and government's point of view though not yet empirically proved, why are in-kind transfers still popularly used? **(4 marks).**

5 (a) What is an externality?

[2 marks]

(b) Suppose, there is a firm operating a steel plant located upstream that dumps industrial effluent or sludge into a river. The sludge dumped into a river is causing the death of fish downstream yet there is a fisherman whose livelihood depends on catching fish for sale to local restaurants. The steel plant is exerting a production externality on the fishermen since its production adversely affects the well-being of the fisherman but the plant does not compensate the fisherman for their loss. The sludge produced is directly proportional to the production of steel, each additional unit of Steel creates one more unit of sludge as well. Below is private marginal benefit (PMB), Social Marginal Cost (SMC), Private

Marginal cost (PMC), Social marginal damage (MD) curves for the monopoly (one steel firm in the community) and society shown in the sketched graph below:



- What type of externality (positive or negative) is shown by the diagram? **(1 mark)**
- What are the equilibrium price and quantity at which the steel plant will operate (the private market solution) to maximise its profit. **(2 marks)**
- How much of the steel should the market supply at the social optimum and under what circumstances **(2 marks)**
- Define deadweight loss **(1 mark)**
- How large is the deadweight loss from the externality? (Hint: using the points labelled with letters, identify the area representing deadweight loss and then calculate the area of the shape) **(2 marks)**
- Briefly explain the implications of the existence of externality with regard to steel plant vis-a-vis society efficiency output level, gains/losses to society as well as why shutting down the steel plant is not socially desirable. **(6 marks)**

(g) Suppose that the property rights are assigned to the fisherman and later on to the steel plant. Using the already drawn diagram, what are the implications of the Coase theorem for social welfare? In other words, state its key arguments and assumptions and explain how an optimal outcome is possible without government intervention. Again, mention the limitations or problems of the application of Coasian Theorem in real world. **(5 marks)**

(h) State and briefly explain two approaches on how governments can intervene to internalise externalities or deal with the problems of externalities. **(4 marks)**

6(a) Define cost-benefit analysis

(3 marks)

(b) Mutare rural society is planning to choose between two mutually exclusive projects of constructing an abattoir or a recreation centre. Both projects require an initial capital outlay of \$10 000 and have lifespan of 5 years from now. Best alternative interest rate on the market is 12%. Furthermore, the social discount rate have been decided to be 10% .The benefits and other costs related to the two projects is as follows:

Abattoir project

Year	1	2	3	4	5
Estimated Total direct costs per year	\$4 000	\$4 000	\$3 000	\$3 000	\$3 000
Value of potential damage caused by the abattoir's pollution	\$500	\$500	\$500	\$500	\$500

Recreational centre project

Year	1	2	3	4	5
Estimated total direct costs per year	\$3 000	\$3 000	\$3 000	\$4 000	\$4 000

(i) Calculate the Net Present Value of both projects from the private sector point of view and state whether these projects are admissible/acceptable. Which project would you recommend and why? **(7 marks)**

(ii) Again, calculate the Net Present Value of both projects from the social point of view and state whether these projects are admissible/acceptable. Which project would you now recommend and why? **(7 marks)**

(c) Cost benefit analysis sometimes fall prey to several pitfalls or temptations to misuse by advocates of the projects in order to obtain favourable NPV result. Briefly explain the chain reaction game, labour game and double counting game in connection with noted

common error in cost-benefit analysis

(7 marks)

(d) When comparing admissible projects, evaluation of projects using Internal Rate of return and the benefit –cost ratio methods can sometimes lead to incorrect decision. Explain the cause of this and state the alternative method which is the most reliable guide? **(2 marks)**

7(a) Distinguish between economic incidence of tax and statutory (legal) incidence of tax **(2 marks)**

(b) Define tax burden

(1 mark)

(c) Define regressive taxation in connection with tax progressivity

(1 mark)

(d) Assuming a perfect competition market in the short run and using partial equilibrium analysis, demonstrate and explain:

(i) The distribution of income between supplier/producer and consumer after the imposition of unit tax. Comment whether the incidences/impact of unit tax is identical or not the same with incidences of ad valorem tax. **(6 marks)**

(ii) tax incidence of unit tax when supply is perfectly inelastic (Clearly state other assumptions you applied) **(5 marks)**

(iii) tax incidence of unit tax when supply is perfectly elastic (clearly state other assumptions you applied) **(4 marks)**

(iv) Just comment on the incidence of unit tax when demand curve is perfectly inelastic and when it is perfectly elastic. **(4 marks)**

(v) Comment on what is likely to happen on the elasticity of supply and demand in the long run **(2 marks)**

8. Write notes about the following concepts and show the difference (Give examples to ensure clarity of concepts)

(a) Direct Taxes and Indirect taxes

(4 marks)

(b) Progressive and Regressive tax

(4 marks)

(c) Toll fees and VAT

(4 marks)

(d) Tax evasion and Tax avoidance

(4 marks)

(e) Zero rated and tax exemption

(4 marks)

(f) Customs duty and exercise duty

(3 marks)

(g) Surtax and carbon tax

(3 marks)

END OF PAPER