University of Athens

Department of Economics   Academic year 2024-2025
                                           Fall-Winter term

Course: Public Finance
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Answer all questions Date due: 6 January, 2025

A. Multiple Choice Questions (Indicate the correct answer with a circle around the appropriate letter**)** Counts 2.5% each

1. The losses to consumers and producers of a tax can be represented by the standard consumer and producer surplus areas
   a. using the actual demand curve.
   b. using a compensated demand curve.
   c. using the actual demand curve if it only represents income effects.
   d. using the actual demand curve if it represents both income and substitution effects.

2. The sharing of the tax burden of an excise tax between consumers and producers
   a. depends on who is taxed.
   b. depends on the relative elasticities of the demand and supply curves.
   c. should not be considered when analyzing taxes.
   d. none of the above are correct.

3. The more inelastic demand is relative to supply
   a. the larger is the difference between the gross and net of tax prices under an excise tax.
   b. the more producers bear the burden of an excise tax.
   c. the more consumers bear the burden of an excise tax.
   d. none of the above are correct.

4. The more elastic demand is relative to supply
   a. the larger is the difference between the gross and net of tax prices under an excise tax.
   b. the more producers bear the burden of an excise tax.
   c. the more consumers bear the burden of an excise tax.
   d. none of the above are correct.

5. The side of the market that the legislature chooses to tax
   a. determines the incidence of the tax.
   b. has no bearing on the incidence of the tax.

c.   changes the price only in the market that is being taxed.

d.   none of the above are correct.

6.   Tax avoidance

a.   is possible because of the presence of private information.

b.   is entirely legal.

c.   occurs when individuals do not fully report their income.

d.   none of the above are correct.

7.   Tax evasion

a.   is not punishable by law.

b.   refers to taxpayers taking advantage of the tax laws to reduce their taxes.

c.   refers to individuals giving to charity to reduce their tax payment.

d.   refers to individuals exploiting private information to reduce taxes.

8.   What should taxes be set to in order to raise a given amount of revenue at minimum overall deadweight loss? Tax rates

a.   should be set to generate an equal percentage change in the compensated demands for most goods.

b.   should be equalized between all goods.

c.   should be set to generate an equal percentage change in the compensated demands for all goods.

d.   should be set to half of the elasticity of the compensated demand curve.

9.   When designing a tax system,

a.   both efficiency and equity should be considered.

b.   neither efficiency nor equity are important.

c.   efficiency is the only objective that should be considered.

d.   equity is the only objective that should be considered.

10. The deadweight loss from taxes

e.   makes society better off.

f.   forces the economy to operate below the utility possibilities frontier.

g.   increases the amount of equity in society.

h.   results from not taxing all goods equally.

11. Food used for home consumption should be taxed heavily

a.   on efficiency grounds, but not taxed heavily on equity grounds.

b.   on equity grounds, but not taxed heavily on efficiency grounds.

c.   under no circumstance.

d.   only in countries that do not implement an income tax.

12. Why do economists consider taxes to be a problem?

a.   Taxes decrease consumer and increase producer surplus.

b.   Taxes drive a wedge between the prices faced by consumers and firms.

c.   Taxes unfairly target the poor.

d.   Taxes raise government revenue.

13. The excess burden of the tax is related to the

a.   income effect.

b.   tax revenue effect.

c.   substitution effect.

d.   price effect.

14. To reduce the deadweight loss of taxes,

a.   goods with an elastic demand curve should be taxed.

b.   goods with an inelastic demand curve should be taxed.

c.   goods with an elastic supply curve should be taxed.

d.   goods with an inelastic compensated demand curve should be taxed.

15. The Benthamite social welfare function assumes that society

a. only cares about inequality.

b. is indifferent to inequality.

c. cares only about those who are the worst off.

d. wants to eliminate all inequality.

16. Rawls view of distributive justice is based on the concept of

a. the greatest good for the greatest number.

b. impersonality.

c. equality for all.

d. the veil of ignorance.

17. Which of the following shapes do most economists argue that social welfare

indifference curves should have?

a. Straight lines.

b. Right angles.

c. Negatively-sloped curves that are convex to the origin.

d. 45-degree lines.

18. Income distribution is more equal the closer the value of the Gini coefficient to

a. 2.

b. 1.

c. 0.5

d. 0.

19. A social welfare function following the utilitarian approach

a. is maximized in the case of identical individuals when income is equally distributed.

b. is maximized in the case of identical individuals when income is unequally distributed.

c. is maximized in the case of individuals who are not identical when income is equally distributed.

d. assumes marginal utility increases per euro of income.

20. An in-kind income transfer results in an

a. increase in consumption equal to the in-kind transfer.

b. increase in consumption of the good transferred and an increase in consumption of other goods as well.

c. increase in consumption of other goods and no increase in consumption of the in-kind good.

d. indeterminate change in consumption, with consumption of at least one of the goods increasing.

Problems   (counts 10% each)

1. Mantara, Inc., is a monopolist whose cost of production is given by $10Q + Q^2$. Demand for Mantara's products is $Q = 200 – 2P$.

a. What price will the monopolist charge and what profits will the monopolist earn? What will consumer surplus be?
b. How will the monopolist's price and profits change if a tax of €15 per unit is imposed on the buyers of the product?
c. What is the excess burden of the tax?

2. In an effort to reduce alcohol consumption, the government is considering a €1 tax on each litre of liquor sold (the tax is levied on producers). Suppose that the demand curve is $Q^D = 500,000 -20,000P$ (where Q^D is the number of litres of liquor demanded and P is the price per litre), and the supply curve for liquor is $Q^S = 30,000P$ (where Q^S is the number of litres supplied).
a. Compute how the tax affects the price paid by consumers and the price received by producers.

b. How much revenue does the tax raise for the government? How much of the revenue comes from consumers, and how much from producers?

c. Suppose that the demand for liquor is more elastic for younger drinkers than for older drinkers. Will the liquor tax be more, less, or equally effective at reducing liquor consumption among young drinkers? Explain.

3. Luxury goods often have much higher elasticities of demand than do goods purchased by a broad base of people. Why, then, are governments more likely to tax luxuries than these "staple" goods?

4. Which of the following is likely to impose a large excess burden?
a. A tax on land.
b. A tax of 24 percent on the use of cellular phones.
c. A subsidy for investment in "high-tech" companies.
d. A tax on the economic profits of a monopolist.

5. The government of Blueland is thinking about imposing a very small tax on one or more of the following goods: videos, books, and sweaters. Anvils and books are both produced in competitive markets with constant marginal costs, while cardigans are produced by a monopoly with constant marginal costs. The elasticities of demand for the three goods are –3, –1.5, and –1. What good or goods should the government put the very small tax on if it wants to minimize the deadweight burden?

6. "Peter the Great at one time levied a tax upon beards. He held that the beard was a superfluous and useless ornament. The tax is said to have been proportional according to the length of the beard and progressive according to the social position of its possessor". Evaluate Peter's beard tax from the standpoint of optimal tax theory and from the standpoint of horizontal equity.

7. Suppose that Anna faces a marginal income tax rate of 35 percent, and if she cheats on her taxes, there is a 2 percent chance that she will be caught. Suppose also that the marginal penalty of tax evasion is $10I$, where I is the amount of unreported income (in thousands of euros). How much income will Anna fail to report?

8. Suppose there are only two people, Simon and Charity, who must split a fixed income of €100. For Simon, the marginal utility of income is

$$MU_s = 400 - 2I_s$$

while for Charity, marginal utility is

$$MUc = 400 - 6Ic$$

where Ic, Is are the amounts of income to Charity and Simon, respectively.
a. What is the optimal distribution of income if the social welfare function is additive?
b. What is the optimal distribution if society values only the utility of Charity? What if the reverse is true? Comment on your answers.
c. Finally, comment on how your answers change if the marginal utility of income for both Simon and Charity is constant:

$$MU_S = 400 \quad MUc = 400$$

9. Would a government program that transferred income from the middle class to both the poor and the rich be supported by someone with the maximin social welfare function?

10. An economy consists of two individuals, Lynne and Jonathan, whose utility levels are given by U_L and U_J, respectively.

a. Suppose that the social welfare function is

$$W = U_L + U_J$$

True or false: Society is indifferent between giving a euro to Lynne and a euro to Jonathan.

b. Now suppose that, instead, the social welfare function is

$$W = U_L + 8U_J$$

True or false: Society values Jonathan's happiness more than Lynne's.

c. Now suppose that, instead, the social welfare function is

$$W = \min [U_L, U_J]$$

True or false: In this society, the optimal distribution of income is complete equality.