

Final Exam

Name _____

- The duration of the exam is 1 hour 20 minutes.
- The exam consists of 6 problems and it is worth 100 points. The extra credit problem will only be counted if you lose points on other problems.
- Please write in the space provided. If necessary, write on the back of the page.
- Please ask me if you have any questions.
- To receive full credit you have to carefully explain all your answers and show all your work.

General advice: If you get stuck in the early parts of a problem, do not stop there. You can receive substantial partial credit by explaining how you would solve the rest of problem if you had the necessary answers from its previous parts.

1. (20 points) Determine whether each of the statements is true or false:
 - a. In a general equilibrium model, a tax on a single factor in its use only in a particular sector can affect returns to all factors in all sectors.
 - b. Working fewer hours to reduce your tax burden is tax evasion.
 - c. According to the Haig-Simons definition of income, employer contributions to health insurance of its employees are not part of income.
 - d. Tax credits are generally more equitable than tax deductions.
 - e. If government uses flat tax only, the tax system cannot be progressive (progressivity is based on average tax rates).
 - f. The economic burden of a cigarette tax will be born by smokers as well as tobacco corporations.

c. Now assume that an *ad valorem* tax is imposed on sellers of shoelaces. On a new graph sketch what will happen to demand and supply curves. What is the new equilibrium price and quantity? What are the prices that buyers pay and suppliers get? Also determine the tax revenues and economic tax incidence on buyer and sellers.

d. Using your answers in (b) and (c) determine whether economic incidence changes depending on which side of the market the tax is imposed on? What about statutory incidence? Determine also how the economic tax incidence is related to the relative slopes (elasticities) of demand and supply.

4. (10 points) Suppose the demand for bread has elasticity equal to -0.5 at the current equilibrium, while the demand for caviar has elasticity of -5 at current equilibrium. Bread is mostly consumed by poor people and caviar is mostly consumed by rich people.
- Suppose that caviar is taxed at 1% rate. What is the optimal tax rate on bread?
 - Do you think such a tax schedule would be feasible to implement? Explain what vertical equity means in this context.
5. (10 points) For each of the following determine whether it should be counted as income (all of it or part of it) according to the Haig-Simons income definition:
- The dividends paid on Microsoft stock.
 - The increase in the value of the Microsoft stock.
 - The value of child care services provided at home by a family member.

d. The price of airline ticket provided by a potential employer for an onsite visit and interview.

e. Salary at the main job.

6. (20 points + 5 extra credit) Consider a country with the flat income tax rate of 20%. The individuals in this country are considering how much to donate to charity organizations. The Marginal Private benefit of charity donations is given by $MPB=100-D$, where D is the donation in after-tax dollars. The Marginal External Benefit is equal to $MEB=50-0.5D$. The Marginal Cost of donations is equal to donation itself $MC=D$.

a. Should charity donations be subtracted from the income according to Haig-Simons income definition?

b. What is the efficient amount of charity donations in this country?

- c. Suppose that charity donations are not tax deductible. What would be the level of donations in this country?
- d. Now suppose that charity donations are tax deductible. What would be the donation level in this country? How much money would government lose?
- e. (extra credit – 5 points) Assuming that the charity donations are not tax deductible, suggest a Pigouvian subsidy that will induce efficient amount of charity donations. Alternatively, if charity donations are tax deductible, what would the income tax rate have to be to achieve the same result? For this tax rate calculate the marginal and inframarginal effects of making charity donations tax deductible.