

YORK UNIVERSITY
Faculty of Graduate Studies
Annual Examination
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Economics 5300.03A : Public Economics I

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time=2 hours

Answer any **five** of the following eight questions.

1. Derive an expression for the marginal excess burden of a tax on some commodity i , when there may be pre-existing taxes on many commodities.

Could this marginal excess burden be negative?

2. Why would the optimal commodity tax involve equal rates on both taxable goods in the following model?

All individuals are identical, and have utility functions of the form

$$U(X_1, X_2, X_3) = X_1 + [X_2 X_3]^\alpha$$

where X_i is quantity consumed of good i , only goods 2 and 3 may be taxed, and $\alpha < 0.5$.

3. Discuss briefly the implications of replacing the Canada Pension Plan with a compulsory private savings plan, in which individuals would be required to invest some fraction of their annual income in the equity of private Canadian corporations.

4. In what sense are the following two types of corporate income tax equivalent?

i A “cash-flow” tax, in which a firm is taxed on the difference between its annual revenues, and its annual expenditures.

ii A corporate income tax, in which only current expenditures may be deducted from taxable income, but in which the firm may deduct all costs of financing investment from taxable income, as well as deducting true economic depreciation on capital assets.

5. Suppose some country financed a pure public good using Lindahl taxation. How would the level of public good provision, and the well-being of existing residents of the country, be affected by immigration of new residents?

continued

6. Derive as precisely as possible the level of public provision for a public good in the following situation.

The level of public good provision is chosen by pairwise majority rule. The cost of the public good equals cZN where Z is the level of public good provision, N is the population, and c is a positive constant. The public good is financed by a proportional income tax. People's incomes are exogenous, and the income distribution has mean \bar{y} and median y_M . Each person has the same utility function,

$$U(x, Z) = x + \sqrt{Z}$$

where x is her private good consumption.

7. Discuss the implications of relaxing any one of the assumptions of the "Tiebout model" for the efficiency of equilibrium in an economy with local public goods.

8. Suppose that capital is freely mobile among jurisdictions, and that some jurisdiction is so small relative to the world capital market that it takes the net return to capital r as given. Suppose also that the jurisdiction must finance its public sector by a unit tax on the capital employed in the jurisdiction. Suppose further that all residents of the jurisdiction are identical to each other.

Show that the jurisdiction will "under-provide" the public good in equilibrium, relative to the "first-best" (Samuelson) rule for optimal public good provision.

the end