YORK UNIVERSITY, Faculty of Arts

Final Examination, April 22 2008

Economics 4080.03MW : Public Finance II

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time=2 hours

The exam contains two sections, A and B. Section A is worth 40 % of the marks, section B 60 %. Note that there is some choice in each section.

A : 40 %(5 % per question)

Explain **briefly** the significance for the economics of public expenditure of any **8** of the following 10 terms.

1. excludable good

2. Lindahl pricing (benefit taxation)

3. marginal social cost

4. common property resource

5. social choice rule

6. single–peaked preferences

7. adverse selection

8. unfunded pension plan

9. local public good

10. equalization

B : 60 % (15 % per question)

Answer any **4** of the following 8 questions.

1. What are all the Pareto optimal allocations in the following 2–person, 2–good economy? Good X is a pure private good, and good Z is a pure public good. The feasible production possibilities for the economy are those (X, Z) combinations for which

$$X + Z \le 12$$

where X is aggregate production of the pure private good and Z is aggregate production of the pure public good. Person 1's preferences can be represented by the utility function

$$u^1(x_1, z_1) = \ln x_1 + 2 \ln z_1$$

and person 2's by the utility function

$$u^2(x_2, z_2) = 2 \ln x_2 + \ln z_2$$

where x_i is person i's consumption of the private good, and z_i is person i's consumption of the public good (and where "ln" refers to the natural logarithm).

2. Describe briefly a tax mechanism which would induce people to reveal truthfully how much they are willing to pay for a single "all or nothing" public project.

3. Suppose that cattle can be sold on competitive markets, at a price of $1 per kilogram. There is a particular piece of grassland, on which cattle can be raised. The weight of each cow raised on this grassland depends on the number of cattle which are being grazed there. In particular, the weight of a cow raised on this grassland will be x kilograms, with

$$x = \frac{400}{\sqrt{N}}$$

where N is the number of cattle being raised on the piece of land. It costs $20 to raise each cow.

i What is the efficient number of cattle to raise on this piece of grassland?

ii How many cattle will be raised there, if there is free access to the land, so that anyone can graze cattle there without paying any entry fee, only the $20 cost of raising the cow?

4. Suppose that residents of a jurisdiction all have the same preferences, and differ only in income. Each person's preferences can be represented by the utility function

$$U(x, z) = (x - 10)z$$

where x is the person's net–of–tax income, in thousands of dollars per year, and z is the public expenditure per capita in the jurisdiction, in thousands of dollars per year.

Public expenditiure in this jurisdiction is financed by a proportional income tax, so that a person of income y pays ty in taxes, where t is the tax rate. The revenue raised by the income tax must exactly cover the cost of public expenditure.

What level of public expenditure per capita will be chosen in the jurisdiction, if expenditure is chosen using pairwise majority rule, if the average income in the city (in thousands of dollars per year) is 45, and if the median income (in thousands of dollars per year) is 30?

5. Discuss the usefulness of Hotelling's principle of minimum differentiation in explaining public expenditure decisions in Canada.

6. What would be the effects of introducing a compulsory, "pay–as–you–go" public pension system into a country in which there had been no public pensions?

7. In 1956, Charles Tiebout wrote : "local government represents a sector where the allocation of public goods (as a reflection of the preferences of the population) need not take a back seat to the private sector". What assumptions underlie that conclusion?

8. Describe the major current (2008) grant programmes by which the Canadian federal government transfers money to provincial governments.

the end