YORK UNIVERSITY, Faculty of LAPS

Final Examination, April 8 2014

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. non–rivalrous good

2. Lindahl pricing (benefit taxation)

3. positive externality

4. negotiation over externalities

5. single–peaked preferences

6. principle of minimum differentiation

7. adverse selection

8. fully funded pension plan

9. Canada Health Transfer

10. flypaper effect

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

$$X + Z \leq 48$$

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

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

and person 2's by the utility function

$$u^2(x_2, z_2) = \ln x_2 + 3 \ln z_2$$

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 "log" refers to the natural logarithm).

2. Suppose there is some public good, and the government is trying to find the efficient quantity to provide of this public good. The quantity of the public good can be varied, and the cost of one unit of the public good is some constant c.

The government chooses to ask each person to report her demand curve for this public good.

Describe a rule for determining the quantity of the public good, and the taxes paid by different people, so that each person would find it in her own interest to report truthfully her demand curve for the public good.

3. If access to a common property resource can be controlled, by charging a price for the use of the resource, how should the price be set so as to maximize the net value of the resource?

4. How many kilometres of highways would be built in the city described below, if all the residents of the city got to vote over all possible amounts of highway building?

The highway is to be financed by a proportional income tax. Each voter has the same preferences, represented by the utility function

$$U(x, H) = x + 3\sqrt{H}$$

where x is the person's after–tax income, and H is the number of kilometres of highway built in the city.

Highways cost $1 million dollars per kilometre to build. There are 1 million people in the city. The average (mean) income in the city is $80,000. The median income in the city is $60,000.

5. If the head of some city's board of education wanted to make that city's education spending as large as possible, and if this head got to propose the city's education budget, how much spending would she propose if her budget had to be approved by a referendum of all the city's voters?

6. Suppose that the probability of a car accident was private information, which only each driver herself knew.

Is it possible for a government–run car insurance plan to provide the same level of coverage (in the event of an accident) to everyone, and to charge the same premium to everyone?

7. How would a compulsory, fully–funded public pension progranmme affect overall saving in the following economy?

All people in the economy are identical. Each person earns $2 million dollars over her working life. Each person's preferences can be represented by the utility function

$$U = C_y C_o$$

where C_y is total consumption over the person's working life, and C_o is total consumption when retired.

The person has no labour earnings when retired. Each dollar that she saves (during her working life) earns a return of 100%, and so yields her $2 in consumption when retired.

The person can save as much as she wants from her earnings during her working life. But she cannot borrow.

The pension plan taxes the person $300,000 over her working life, and pays her a total pension income of $600,000 when she is retired.

8. Does the current Canadian equalization programme (of grants from the federal government to provinces) equalize the cost of public output provision across provinces?

Explain briefly.

the end