

YORK UNIVERSITY, Faculty of LAPS

Final Examination, April 13 2012

**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. pure public good
2. preference revelation mechanism
3. Pigouvian (corrective) tax
4. common property resource
5. independence of irrelevant alternatives
6. single-peaked preferences
7. moral hazard
8. golden rule of economic growth
9. local public goods
10. equalization

**B : 60 % ( 15 % per question )**

Answer any 4 of the following 8 questions.

1. Suppose that some community finances a pure public good using Lindahl (or “benefit”) taxation (and that people’s demand curves for the public good are known).

Is it possible that some people in the community might be made better off if someone left the community (and the taxes and public good level were recalculated after the person left)?

Explain briefly.

2. How much tax revenue would be collected by the following “pivot tax” mechanism, if each person tries to use the mechanism to make herself as well off as possible?

The indivisible (“all or nothing”) public project costs \$4000. There are 4 people : each person knows how much she values the project (but nobody else knows her valuation). Person #1 values the project at \$500, person #2 values it at \$1000, person #3 values the project at \$1100, and person #4 values it at \$1200.

The rules of the tax are : the project will be undertaken if and only if the sum of people’s announced valuations exceeds the cost of the project, \$4000. If the project is undertaken, each person will pay the same share, \$1000, of the cost. In addition, if any person is “pivotal” (that is, if her valuation alters the overall result), then she will have to pay a pivot tax, equal to the (absolute value of the) difference between the sum of everyone else’s announced valuations and the sum of the shares of the cost (3000) which they must pay.

**continued**

3. Does the possibility of negotiation among firms mean that there is no role for a government in correcting externalities? Explain briefly.

4. Suppose that three legislators get to choose both the level of spending on snow removal, and the level of spending on street lighting. They vote separately on these two categories of spending, using pairwise majority rule for each. The cost of snow removal, and the cost of street lighting, are both shared equally among all residents. Committee member  $i$  has preferences

$$U_i = X_i + a_i \ln R + b_i \ln L$$

where  $X_i$  is per capita income (net of taxes) in her district, after taxes,  $R$  is per capita expenditure on snow removal,  $L$  is per capita expenditure on street lighting, and the values of  $a_i$  and  $b_i$  for the three legislators are listed below. The average income (before taxes) in each district is \$30000.

What level of spending on snow removal, and what level of spending on street lighting would be chosen? Explain briefly.

legislator	$a_i$	$b_i$
1	1100	500
2	400	100
3	600	600

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

**continued**

6. Suppose that people's risk of illness was private information, which only they knew.

Is it possible for a government-run health insurance plan to provide the same level of coverage to everyone, and to charge the same premium to everyone?

Discuss briefly.

7. Suppose that the cost per person of some publicly-provided good was a **declining** function of the population served. In particular, suppose that the cost of providing a level of quality  $Q$  of the good to  $P$  people was  $Q$  in total, or  $Q/P$  per person.

Suppose as well that there are 2000 people : 1000 of them have preferences which can be represented by the utility function

$$U = 1000x + \ln Q$$

and the other 1000 of them have preferences which can be represented by the utility function

$$U = 500x + \ln Q$$

where  $x$  is consumption of a private good (which costs \$1 per unit), and  $Q$  is the quality of the publicly-provided good.

If the cost of the local public sector is to be divided equally among all residents of any jurisdiction, is it better to have the two groups living in the same town, or living in two different towns, each with its own quality of the publicly provided good?

Explain briefly.

8. Outline the main current programmes through which the Canadian federal government transfers revenue to provincial governments.

**the end**