

YORK UNIVERSITY, Faculty of LAPS

Final Examination, April 11 2016

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. marginal social cost
4. Pigouvian (corrective) tax
5. median voter
6. bureaucracy
7. adverse selection
8. “pay-as-you-go” (unfunded) pension plan
9. local public goods
10. equalization

B : 60 % (15 % per question)

Answer any 4 of the following 8 questions.

1. What are all the efficient allocations in the following economy?

There are two goods, a pure private good x and a pure public good z . There are two people.

The equation of the economy's production possibility curve is

$$X + Z = 160$$

where X and Z are the total quantities produced of the private and public good.

Person 1's preferences can be represented by the utility function

$$U^1(x_1, z_1) = 3 \log x_1 + \log z_1$$

and person 2's by the utility function

$$U^2(x_2, z_2) = \log x_2 + \log z_2$$

where x_i and z_i are person i 's consumption of the private and public good, and "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.

continued

3. Suppose there is some input Z to production with the following properties : increases in firm 1's own purchases Z_1 of the input lead to increased profits for firm 2, and increases in firm 2's own purchases Z_2 of the input lead to increased profits for firm 1.

Is the equilibrium allocation efficient, when each firm chooses its own input quantities so as to maximize its own profit?

Explain briefly.

4. Three towns are located along a straight road. Town 1 is at the south end of the road, and has 60,000 inhabitants. Town 2 is located 25 kilometres north of town 1, and has 40,000 inhabitants. Town 3 is located 45 kilometres north of town 2, and has 125,000 inhabitants.

People can travel along the road at 1 kilometre per minute.

The three towns are all in the same county (and contain all the people in the county). Two parties are running for election to the county council ; each wants to win. The one issue in the election is where to locate the new post office for the county. Each voter wants her travel time to the post office to be as low as possible. (The post office can be located at any point on the 70-kilometre length of the road.)

What location will each party propose as a location for the post office, if they each want to win the election? Explain briefly.

5. 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.

continued

6. Would expanding the Canada Pension Plan [by increasing people's required CPP "contributions" deduction from their labour income, and by increasing the size of the pensions they collect when retired] affect the total amount of saving in Canada? Explain.

7. What would the equilibrium provision of local public goods in different suburbs be in the following metropolitan area?

There are 30 different suburbs. There are 3 million people in the metropolitan area, each of whom is perfectly mobile among suburbs.

Income, and the cost of the local public good, is measured in thousands of dollars per year.

The cost of providing one unit of the local public good to each of n people is cn , where c is a positive constant.

Each person in the metropolitan area has the same preferences, represented by the utility function

$$U(X, Z) = XZ$$

where X is the person's after-tax income, and Z is the number of units of the local public good which she gets to consume.

There are 1 million people with income of 50, 1 million people with income of 60, and 1 million people with income of 80.

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

the end