Abstract

Please answer all the following questions. You are welcome to answer in English or in Danish. Question 1 weighs 1/3 in the grading, question 2 weighs 2/3.

1. (a) What is a Condorcet winner?
    (b) Discuss political business cycles.
    (c) Discuss how voters through retrospective voting can limit the amount of rents a government can divert.

2. Consider an economy that lasts two periods. The public sector provides public goods in both periods. There are two types of public goods, $g^R$ and $g^D$. The provision of type $R$ good in period 1 is $g_1^R$ and so forth. Period one provision of the public good is financed by issue of public bonds, $b$, so $b = g_1^R + g_1^D$. Taxes are collected in the second period. Consumers derive utility from private consumption and public goods. The higher the total public expenditure is, the lower is the utility derived from consumption of private goods. The utility from private goods for the representative individual can therefore be written in terms of an indirect utility function $W(b + g_2^R + g_2^D)$. There are two types of individuals. The indirect utility function of an individual of type $J$, $J = R, D$ is

$$w^J = W(b + g_1^R + g_1^D) + H(g_1^R) + H(g_1^D) \quad (1)$$

where, $W' < 0$, $W'' < 0$, $H' > 0$ and $H'' < 0$.

An individual of type $R$ ($D$) only gets utility from the public good of type $R$ ($D$).

There is one representative agent of each type, $J$. (So, a continuum of measure 1 of each type).
(a) Find the provision of public goods in each period and of each type in the "social optimum", i.e. the provision chosen by a benevolent social planner, who maximizes the sum of utilities of all agents. Call this solution the first best.

(b) Now suppose that each group can choose the provision of public goods for the type of public good that it prefers. Taxes however are paid in common. There is no commitment, so in period 1, the period 1 provision is chosen and afterwards in period 2, period 2 provision is chosen. Show that the levels of public goods chosen become inefficiently high.

(c) Now suppose that there are two political parties, one representing the type $R$ individuals and one representing the type $D$ individuals. The time line is as follows. In the first period the $R$ party is the incumbent and chooses the level of $g_1^R$, and $g_1^D$ and therefore $b$. Then an election is held, which we do not model explicitly, but it is known that party $R$ wins with probability $p_R$, where $0 \leq p_R \leq 1$. In the second period the winning party chooses the levels of public goods, $g_2^R$ and $g_2^D$. What happens in the first period will the public debt be higher or lower than under first best?

(d) Now suppose that there is only one type of public good, $g_1$ in period 1 and $g_2$ in period 2. However, the two groups (and their parties) have different preferences wrt public goods. The utility function of a type $J$ individual (and party) is as follows

$$w_J = W(b + g_2) + \alpha_J (H(g_1) + H(g_2))$$  \hspace{1cm} (2)$$

where $0 < \alpha^R < \alpha^D$.

Suppose that party $R$ is the incumbent in the first period and that party $R$ wins the election between the periods with probability $p_R$ just as in question 2.c. What happens in the first period, will the public debt be higher or lower than under first best?

(e) Discuss the empirical relevance of these results.