PUBLIC ECONOMICS

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EXERCISES

TOPIC 2.3. PUBLIC CHOICE THEORY

EXERCISE 1

Suppose that each of the 17 Spanish regions has one vote in a chamber of territorial representation, and the decisions had to be approved by an absolute majority. This Chamber has to decide on two investment projects in communication infrastructures:

    a) The infrastructure project "A" affects five regions. The positive impact of the project for each of them is 400 million euros. The overall cost of the project is 1,700 million euros.

    b) The infrastructure project "B" affects six regions (different from the previous ones). The positive impact of the project for each of them is 300 million euros. The overall cost of the project is 1,700 million euros.

If each region votes in favour only of the options that represent an economic benefit, and the cost of each project will be financed equally by the 17 regions, answer the following questions:

    A) If both projects are voted on independently, will they be approved? Would they be efficient? Indicate in a table the revenues, costs, profits and voting decision in both projects for each of the regions of each group, and globally.

    B) How might the vote-trading and mutual concessions work in this case?

    C) Would the vote-trading be positive? How would your answers change if the gross benefits of the projects become 310 million euros for A and 260 million euros for B?

EXERCISE 2

(Rosen, 2007) Consider the following ordering performed by 5 people: 1, 2, 3, 4 and 5, in relation to four projects (A, B, C and D):

1	2	3	4	5
A	A	D	C	B
D	C	B	B	C
C	B	C	D	D
B	D	A	A	A

a) Draw the preferences.
b) Will any of the projects be elected by the majority voting rule? If the answer is yes, say which one. If not, explain why.

EXERCISE 3

Suppose that each of the 27 countries of an international organization has one vote in its House of Representatives, and the decisions had to be approved by an absolute majority. This House of Representatives has to decide on the realization of two investment projects in industrial activities:

- Infrastructure project "A" positively affects 7 countries. The positive impact of the project for each of them is 250 million euros. The overall cost of the project is 2,700 million euros.
- Infrastructure project "B" positively affects 11 countries (different from the previous ones). The positive impact of the project for each of them is 200 million euros. The overall cost of the project is the same as "A".

If each country votes in favour only of the options that represent a positive economic benefit/profit (if not, vote against), and the cost of each project will be financed equally by the 27 countries, answer the following questions:

A) If both projects are voted on independently, will they be approved? Would they be efficient? Indicate in a table the revenues, costs, profits and voting decision in both projects for each of the countries in each group, and globally.
B) Could the vote-trading ("logrolling") and the system of mutual concessions work in this case? Would the vote-trading be positive?

Give adequate reasons for your answers.

EXERCISE 4

1. Arrow's impossibility theorem states that if there are at least three alternatives and the number of subjects is finite:
   a) There is always some rule of public choice that meets the conditions of unrestricted domain, weak Pareto optimality, absence of dictators, rationality, and independence of irrelevant alternatives.
   b) There is no public choice rule that meets the conditions of unrestricted domain, weak Pareto optimality, absence of dictators, negative association, rationality, and independence of irrelevant alternatives.
   c) There is no public choice rule that meets the conditions of unrestricted domain, weak Pareto optimality, absence of dictators, rationality, and independence of irrelevant alternatives.
   d) The above answers a), b) and c) are correct.

2. A majority-voting system generally meets the conditions of:
    a) Unrestricted domain, weak Pareto optimality, absence of dictators, rationality and independence of irrelevant alternatives.
    b) Unrestricted domain, absence of dictators and independence of irrelevant alternatives.
    c) Weak pareto optimality, absence of dictators, rationality and independence of irrelevant alternatives.
    d) Unrestricted domain, absence of dictators, positive association and independence of irrelevant alternatives.

3. In general, majority-voting system is not efficient because:
    a) The demands of individuals are different.
    b) Individual taxes are considered proportional.
    c) It does not take into account the intensity of the preferences.
    d) The above answers a), b) and c) are correct.

4. The vote-trading and mutual concessions usually lead to:
    a) The final solution is always efficient.
    b) The final solution is efficient or not according to the benefits and costs involved.
    c) It does not take into account the intensity of the preferences.
    d) The above answers a), b) and c) are correct.

5. The Downs-Hotelling model of representative democracies:
    a) It has as one of its more important limitation the real existence on many occasions of the polarization of ideology.
    b) One of its more important limitation is the real need to try to maximize the number of votes by political parties.
    c) It has as one of its more important limitation the real need for many systems to be fully bipartisan.
    d) One of its more important limitation is the actual existence on many occasions of the "strategic voting".

6. The main problem of a benevolent planner is that:
    a) It observes individual preferences, but subjects have no incentive to reveal them.
    b) It does not observe individual preferences, and subjects have no incentive to reveal them.
    c) It does not observe individual preferences, although subjects have incentives to reveal them to him.
    d) The above answers b) and c) are correct.