

Second Midterm Exam in Public Choice

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You have two weeks to finish the following exam. Your answers should be as clear, concise and complete as possible. (Even a fairly weak answer is generally better than no answer.) Your answers should be typed and your drawings should be done using a graphics program (and clearly labeled). Read each question carefully. Good luck.

I. Section One (25 percent): True, False, or Uncertain.

Determine whether or not each of the following statements are true, false, or uncertain. Explain your reasoning *very briefly* in four or five sentences. (The explanation is generally as important as the answer given.) Include a carefully labeled diagram if it helps to clarify your reasoning.

1. If voter preferences are single peaked in the sense that distance from a voter's ideal point can be used to rank policies, there can be no electoral cycles.
2. In the standard Tullock probabilistic rent seeking game, average rent-seeking expenditures rise as the number of players increases.

3. The median voter model is completely incompatible with sustained growth in the size of government.
4. Probabilistic voting, by itself, implies that all policies that are determined by majority rule are Pareto efficient.
5. The existence of deregulated industries contradicts Stigler's model of regulation.

II. Problems and puzzles: (25 percent each).

1. Construct two median voter models of the regulation of carbon dioxide emissions, one for the United States and one for the European Union. Assume that the median voter in each case values both ordinary consumption and environmental quality, $U = u(C, E)$. The median voter expects environmental regulation R to decrease domestic emissions and thereby increase long term environmental quality. However, it is total emissions rather than domestic emissions that determine environmental quality. The median voter expects increased domestic regulation to increase the cost of ordinary consumption. Initially assume that nominal consumer income is exogenous and that all nominal income is consumed (a fairly reasonable assumption for the median voter of the U. S., neglecting pensions).
 - a. Mathematically and graphically characterize the stringency of the environmental regulation that will be adopted. Explain.
 - b. Characterize the Nash equilibrium regulations for the two countries.
 - c. Does the median voter theorem apply to your model of environmental regulation? Why or why not?
 - d. Show how an increase in nominal income affects your Nash equilibrium for environmental regulation.

2. Analyze the concept of rent seeking from the perspective of public choice.
 - a. Carefully define rent seeking. Under what circumstances are rents completely dissipated by socially wasteful expenditures?
 - b. Construct a 3 person rent seeking contest using a Tullock contest success function. Define all variables, determine the strategies of each player and the Nash equilibrium of your contest.
 - c. Do institutions matter in determining the degree of rent dissipation? If so, illustrate and/or discuss how such effects can be incorporated into your model..
 - d. Is your rent-seeking model compatible with Peltzman's theory of regulation?

3. Analyze the merits of more or less decentralized forms of federalism.
 - a. Briefly explain the assumptions and implications of the Tiebout model.
 - b. Briefly explain the assumptions and implications of Oate's decentralization theorem.
 - c. Briefly characterize the NIMBY regulatory externality problem using a three by three game matrix with two neighboring states or countries. Explain briefly the nature and relevance of the problem.
 - d. A possible institutional solution to NIMBY problems is the formation of a treaty organization. Explain why such organizations can solve regulatory externality problems, at least in principle, and why associations of states (or provinces) may be more effective than associations of nations.