

Written Exam at the Department of Economics winter 2019-20

Political Economics

Final Exam

13 January 2020

(3-hour closed book exam)

Answers only in English.

This exam question consists of 5 pages in total

Falling ill during the exam

If you fall ill during an examination at Peter Bangs Vej, you must:

- contact an invigilator who will show you how to register and submit a blank exam paper.
- leave the examination.
- contact your GP and submit a medical report to the Faculty of Social Sciences no later than five (5) days from the date of the exam.

Be careful not to cheat at exams!

You cheat at an exam, if during the exam, you:

- Make use of exam aids that are not allowed
- Communicate with or otherwise receive help from other people
- Copy other people's texts without making use of quotation marks and source referencing, so that it may appear to be your own text
- Use the ideas or thoughts of others without making use of source referencing, so it may appear to be your own idea or your thoughts
- Or if you otherwise violate the rules that apply to the exam

Instructions

This exam set consists of three problems with one or more questions. Answer all problems and questions. Each question has a suggested length, written in parentheses at the end the question. You may use these suggestions as a guide on how to prioritize your time; there is no penalty for writing more than indicated in the suggestions. But shorter answers may also suffice.

Problem 1

Imagine an economy where citizens live in N equal-sized electoral districts, where N is some odd number. The population in each district is normalized to 1, so that the total population is N .

There are two types of citizens in the economy: Blue collar and white collar. Blue collar citizens earn income y_B , whereas white-collar citizens earn $y_W > y_B$. The distribution of citizens is such that blue-collar citizens are in the majority in $N_B \geq \frac{N+1}{2}$ districts, while the remaining districts have a majority of white-collar citizens. Let \bar{y} denote the average income level in the economy across all districts.

Citizens of both types derive utility from private consumption as well as from government spending in their own district. In particular, a citizen of type i living in district n has preferences expressed by the utility function

$$u_{in} = 2c_i^{\frac{1}{2}} + \alpha g_n, \quad i = B, W, \quad n = 1, \dots, N$$

where c^i is private consumption for a citizen of type i , g_n is the amount of government resources spent in district n , and α is a taste parameter.

Government spending is financed by a proportional income tax on all citizens. Let τ denote the tax rate, which is the same for everyone. Further, let $g = \sum_{n=1}^N g_n$ denote the total amount of government spending in the economy.

To decide on the levels of taxation and government spending, the citizens in each district elect one representative to a central legislative body, from now on referred to as “the legislature”. Like other citizens, these representatives can either be blue-collar or white-collar citizens, and their preferences are just like those of other citizens of the same type. For simplicity, assume that one candidate of each type runs for office in each district, and the candidate who receives the most votes wins.

Once in office, legislators act according to their own preferences; it is not possible for them to commit to promises made before the election, and voters know this. Legislators decide on the tax rate by simple majority rule, i.e. by voting on all possible pairs of policy alternatives until a clear winner is found.

1A. Assume, for now, that the constitution dictates that government spending must be distributed equally across the N districts. Write down the government budget constraint as well as the private budget constraints and indirect utility functions for both types of citizens under this requirement. Use the results to derive the bliss points for τ for both types, and comment briefly on the difference between them. (Suggested length: 10-15 lines)

1B. With the distribution of government spending across districts constitutionally decided, the only job for the legislature is to decide how much to tax and spend in total. What is the outcome of the legislative process under these assumptions, and how does it depend on the number of blue-collar legislators relative to the number of white-collar legislators? (Suggested length: 5-10 lines)

1C. Still under the assumptions in 1A and 1B, explain how many blue-collar workers and how many white-collar workers voters will elect for the legislature. What is the equilibrium policy outcome under these assumptions? (*Suggested length: 5-10 lines*)

We now abandon the assumption that the constitution dictates the distribution of government spending across districts. For the remaining part of this problem, assume instead that the members of the legislature decide this through multilateral bargaining, after they have decided on a tax rate. In particular, assume the following procedure:

- 1. The members of the legislature decide on the tax rate τ through simple majority voting, comparing all possible pairs of policy alternatives until a clear winner is found.*
- 2. A single legislator is recognized as the proposer and proposes how total government spending should be distributed across districts, subject to the balanced budget constraint and the decision made in step 1.*
- 3. The legislature votes on the proposal. If a majority is in favor, the proposal passes and is implemented. If a majority votes against it, it fails, and a status quo policy of equal spending in all districts is implemented.*

1D. Consider the problem facing the legislator who gets recognized as the proposer: What is the best proposal that this legislator can make (as seen from his/her own point of view), given the procedure described above? In particular, what level of government spending should the proposer propose for his/her own district? And how does the answer depend on the level of the tax rate chosen in step 1? (*Suggested length: 5-10 lines*)

(Hint: Start at step 3 in the procedure described above and find out how much government spending a non-proposer would demand for her own district in order to vote for the proposal. Then think about how many legislators need to support the proposal for it to pass, and combine these answers to figure out how much the proposer must propose to spend in other districts. The tax rate is decided in step 1, so you should treat this as exogenously given at this stage).

1E. Assume first that (1) all legislators have the same probability of being recognized as proposer, and (2) conditional on not being recognized, a legislator is included in the minimal winning coalition with probability one half. Derive the *expected* level of government spending in each district as a function of the tax rate τ under these assumptions. Does the expected level of government spending in a district depend on the type of the legislator who represents it? (*Suggested length: 3-5 lines*)

1F. Based on your answer in 1E, discuss how the introduction of the legislative bargaining procedure changes the decision problem facing voters compared to the situation where the constitution dictates an equal distribution of government spending across districts. Should we expect this change in the rules of the political process to affect (a) the composition of the legislature, and (b) the level of taxation and total government spending? Why / why not? (*Suggested length: 5-10 lines*)

1G. Assume now that white-collar legislators are better educated and have better connections and superior oratorical skills compared to blue-collar legislators. For these reasons, white-collar legislators have a higher probability of being recognized as the proposer than blue-collar legislators. Discuss how this change in assumptions affects the answers to the questions raised in 1E and 1F (no derivations are necessary). In particular, explain the trade-off now facing blue-collar voters when they decide whom to elect for the legislature. (*Suggested length: 15-25 lines*)

Problem 2

The table below is cut out from Table 2 in the paper by Fernando Ferreira and Joseph Gyourko titled "Do political parties matter? Evidence from U.S. cities", published in *The Quarterly Journal of Economics* in February 2009.

The paper focuses on a number of political-economic outcomes in American cities. The table reports coefficients from OLS and RD regressions of the dependent variables indicated in the table on an indicator variable for whether the mayor in the city is a Democrat. All dependent variables are transformed to log scales.

Dependent variables	% diff. between Dem and Rep mayors			
	OLS uncond. (2)	OLS conditional (3)	RD cubic (4)	RD linear (5)
⋮				
Total revenues per capita (\$)	0.129 (0.029)	0.058 (0.022)	-0.016 (0.022)	-0.014 (0.013)
Total taxes per capita (\$)	0.160 (0.033)	0.091 (0.024)	-0.013 (0.021)	0.008 (0.012)
Total expenditures per capita (\$)	0.131 (0.029)	0.060 (0.022)	-0.009 (0.021)	-0.015 (0.013)
Total employment per 1,000 residents	0.169 (0.035)	0.087 (0.028)	0.017 (0.016)	0.014 (0.011)

2A. Column (2) in the table reports results from an OLS regression with no control variables. Briefly explain what the coefficients in this column show. Is it reasonable to interpret these coefficients as estimates of the causal effect of having a Democratic mayor on the size of government in the city? Why / why not? (*Suggested length: 10-15 lines*)

2B. Columns (4) and (5) report results from regression discontinuity analyses. Briefly explain what the central idea behind this research design is in this particular context, and why it may give a more reasonable estimate of the causal effect than the simple OLS regression used in column (2). (*Suggested length: 5-10 lines*)

2C. Based on the evidence presented in the table, what would you conclude about the importance of local election outcomes for the size of government in U.S. cities? Do you think this conclusion generalizes to cities in other countries? Why / why not? (*Suggested length: 10-15 lines*)

Problem 3

The table below is a cut-out from a paper by Alberto Alesina and George-Marios Angeletos titled “Fairness and Redistribution”, *American Economic Review*, vol 95 no. 4. It reports results from a linear regression using individual-level data from the World Value Survey, a global survey with respondents from more than 100 countries. The dependent variable is a binary indicator for whether the respondent classifies himself/herself as being on the left of the political spectrum. The explanatory variable in the top row is a dummy variable taking the value one if the respondent believes that income is mostly determined by luck. In addition to those shown in the cut-out, an extensive list of individual- and country level explanatory variables are included on the right-hand side in each regression.

TABLE 2—THE EFFECT OF THE BELIEF THAT LUCK DETERMINES INCOME ON INDIVIDUAL POLITICAL ORIENTATION

Dependent variable: Being left on the political spectrum			
	1	2	3
Individual belief that luck determines income		0.541*** (3.69)	0.607*** (3.78)
Gini coefficient			-0.627*** (1.93)
⋮	⋮	⋮	⋮
Constant	0.347*** (16.15)	0.045 (0.62)	0.218 (1.64)
Observations	20269	16478	14998
R-squared	0.03	0.03	0.04

Sources: The dependent variable is constructed using data from the *World Value Survey*. It is a 0-to-1 indicator for whether the respondent classifies himself/herself as being on the left of the political spectrum. The question is formulated as follows: “In political matters, people talk of left and right. How would you place your views on this scale, generally speaking?” The respondent is given a scale 1 to 10, 1 being the most leftist. We classified leftist anyone who answered with a score of 5 or below. All other individual characteristics are also from *World Value Survey*. We report OLS estimates, with *t* statistics in parentheses (* significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent).

3A. Explain what the concept “reciprocal altruism” means and how it may relate to the question of whether people support redistributive policies targeted towards the poor in society. Based on the theory and empirical evidence you have seen in the course, and on the information shown in the table above, discuss whether this concept can help explain why there is less redistribution in the United States than in most Western European countries. (*Suggested length: 20-30 lines*)