Written Exam for the B.Sc. or M.Sc. in Economics winter 2014-15

Political Economics

Final Exam/ Elective Course/ Master's Course

January 14, 2015

(3-hour open/closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

This exam question consists of 4 pages in total

Exam for the M.Sc. in Economics

University of Copenhagen

Political Economics, Fall 2014

January 14, 2015

3 hours

Answers should be given in Danish or English

No aids allowed except Danish-English / English-Danish dictionaries

Question 1, Short Questions

a)

The table below is taken from Ansolabehere, Snyder, Strauss, and Ting: "Voting Weights and Formateur advantages in the Formation of Coalition Governments", American Journal of Political Science 2005. Using data on the composition of coalition governments in 14 democratic countries, the table shows the results from a linear regression of a party's share of cabinet posts in the government on i) a dummy variable indicating whether it was the formateur party in the government formation process, ii) its share of voting weights in the legislature, and iii) a constant.

	Unweighted (1)	**PM Weighted** (2)
Formateur (β_1)	.15* (.05)	.25* (.04)
Share of Voting Weight (β_2)	1.12* (.13)	.98* (.11)
Constant	.07* (.02)	.06* (.02)
R^2	.72	.82
# Observations	680	680

Dep. Var. = Share of Cabinet Posts
Clustered standard errors in parentheses, where each cluster is a country.
*statistically significant at the .01 level.

What does the legislative bargaining model of Baron and Ferejohn predict about the relationship between the dependent variable and the explanatory variables in the table? Are the results in the table consistent with these predictions? (you may focus on the results in column (1) only if you wish) Why / why not?

b)

In the imaginary country of Atlantis, poor people are able to ride public transportation for free. In particular, the rule is that if a person's total income in some calendar year is 100,000 kr., or below, that person gets free public transportation throughout the following calendar year. A researcher is interested in estimating whether having free access to public transportation makes people more likely to vote because it makes it easier to get to the polling stations. She wants to use a regression discontinuity design and has access to data for all people in Atlantis who are between 20 and 60 years old. For each person the data shows:

- Whether they voted in the general election in Atlantis in November 2013.
- Whether they were born in a city or in the country-side.
- What their total income was in 2012

Explain how the researcher can use regression discontinuity with this data to get an estimate of the effect of free public transportation on election turnout. Also explain how she can test the assumptions underlying regression discontinuity that are necessary for the estimated effect to have a causal interpretation.

Question 2, Political Agency

A particular university has an economics department that consists of a continuum of students who are about to elect a president for their student government, called "Polot-rådet". The job for the president of Polot-rådet is to secure good teaching at the economics deparment by putting effort, $e \in [0, 1]$, into convincing the teachers at the economics department to provide good teaching. This occurs according to the production function f, which takes president effort as an input. So a president who exerts a level of effort e results in a quality of teaching $T = f(e)$. We will assume that the function f takes the following form:

$$f(e) = e, \qquad 0 \leq e \leq 1$$

Students who are not running to become president of Polot-rådet have a utility function, $U(T)$, that depends on the quality of teaching, T, as follows:

$$U(T) = \sqrt{T}$$

In addition, there are two students, Asger and Nikolaj, who will be running for the job of president of Polot-rådet. Both Asger and Nikolaj get a utility of 0 if they are not elected as the president. If they are elected to become the president, their utility depends on the amount of effort they put in. If Nikolaj is elected to be the president and puts in an effort of e he gets a utility of:

$$V_N(e) = R - e, \qquad 0 \leq e \leq 1$$

If Asger is elected to be the president and puts in an effort of e he gets a utility of:

$$V_A(e) = R - \beta \cdot e, \qquad 0 \leq e \leq 1$$

Here β is a constant satisfying $0 < \beta < 1$.

The election process among the students takes place as follows. First the candidates, Asger and Nikolaj, simultaneously announce and commit to how much effort they will put in if they are elected, e_A and e_N. Next, all students vote for one of the two candidates and the candidate who gets the most votes is elected as president (ties are resolved by a coinflip). Finally, the elected candidate exerts the effort-level he announced in the beginning.

a)

Assume that $R > 1$ and (as usual) that voting students use a coinflip when they are indifferent about who to vote for. Find a (Subgame Perfect) Nash Equilibrium of this model. Which effort levels do Asger and Nikolaj announce?

b)

Assuming still that $R > 1$, show that the equilibrium you found under a) is unique. You may assume that voting students always vote for their preferred candidate and use a coinflip when they are indifferent about candidates.

c)

In the unique equilibrium you found above, does the implemented level of effort differ depending on whether Asger or Nikolaj wins? Why? Which feature of the model is driving this result?

d)

What would happen if the model was changed so that candidates were unable to commit to a certain level of effort in the first step? Would the implemented level of effort differ depending on whether Asger or Nikolaj wins? Alternatively, what if the model was instead changed to include probabilistic voting? Would the implemented level of effort then depend on who wins the election? You do not have have to provide any formal derivations but make sure to explain your answers in words.

e)

Assume now that $\beta < R < 1$. Also assume that students now always vote for Asger when they are indifferent between candidates. Find a Subgame Perfect Nash Equilibrium of the model.

Question 3, Redistribution

French economist Thomas Piketty recently published a book titled "Capital in the Twenty-First Century". In the book, Piketty describes how the income share of top income earners has increased substantially in recent decades in a number of Western societies due to strong income growth in the very top of the income distribution. Based on the theory and evidence presented in the course, discuss how such an increase in inequality can be expected to affect the level of redistribution in Western societies. Write at most one page.