

# Written Exam for the B.Sc. or M.Sc. in Economics, Summer school 2015

## Applied Economics

Final Exam/ Elective Course/ Master's Course

15-17 August 10 am to 10 am

This exam question consists of 3 pages in total

**The page limit for solutions is 6 pages (including everything).**

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.

If you are in doubt about which title you registered for, please see the print of your exam registration from the students' self-service system.

***The paper must be uploaded as one PDF document (including the standard cover and the appendices). The PDF document must be named with exam number only (e.g. '1234.pdf') and uploaded to Absalon.***

### Focus on Exam Cheating

In case of presumed exam cheating, which is observed by either the examination registration of the respective study programmes, the invigilation or the course lecturer, the Head of Studies will make a preliminary inquiry into the matter, requesting a statement from the course lecturer and possibly the invigilation, too. Furthermore, the Head of Studies will interview the student. If the Head of Studies finds that there are reasonable grounds to suspect exam cheating, the issue will be reported to the Rector. In the course of the study and during examinations, the student is expected to conform to the rules and regulations governing academic integrity. Academic dishonesty includes falsification, plagiarism, failure to disclose information, and any other kind of misrepresentation of the student's own performance and results or assisting another student herewith. For example failure to indicate sources in written assignments is regarded as failure to disclose information. Attempts to cheat at examinations are dealt with in the same manner as exam cheating which has been carried through. In case of exam cheating, the following sanctions may be imposed by the Rector:

- 1. A warning
- 2. Expulsion from the examination
- 3. Suspension from the University for at limited period or permanent expulsion.

The Faculty of Social Sciences  
The Study and Examination Office  
October 2006

1. Suppose you are interested in studying if holding political power for longer (*Total Tenure*) increases the probability of establishing a political dynasty (*Post-Relatives*).

- Explain why the following OLS regression does not allow by itself to identify a causal relationship:  $Post - Relatives_i = \alpha + \gamma Total Tenure_i + \beta X_i + \varepsilon_i$  (where  $i$  refers to legislator  $i$ , and  $X$  is the set of legislators' characteristics).
- Dal Bó, Dal Bó and Snyder ("Political Dynasties", RESTUD 2009) use a Regression Discontinuity approach in which the outcome of close election is an instrument for tenure length. Please explain potential limitations and problems with using this identification strategy in that application.
- Explain how you can take advantage of the natural experiment of the random allocation of terms in the Argentine Congress (see "Term Length and the Effort of Politicians", Dal Bó and Rossi (RESTUD 2011)) to identify the causal relationship between political power and the probability of having future relatives with political power.

2. Here you can find Table 3 (First stage by Birth Cohort - Dependent variable: Conscription) and Table 4 (Estimated impact of conscription on crime rates) from "Conscription and Crime: Evidence from the Argentine Draft Lottery" (Galiani, Rossi y Schargrodsky, AEJ 2011).

Table 3

Cohort	1958-1962 (1)
Draft Eligible	0.6587*** (0.0012)
Constant	0.0421*** (0.0008)
Observations	5,000
Method	OLS

Notes: Robust standard errors are shown in parentheses. The level of observation is the cohort-ID number combination. Column 1 includes cohort dummies. \*\*\* Significant at the 1 percent level.

Table 4

Cohort	Dependent Variable: Crime Rate			
	1958-62 (1)	1958-62 (2)	1958-62 (3)	1958-62 (4)
Draft Eligible	0.0018*** (0.0006)	0.0018*** (0.0006)		
Conscription			0.0027*** (0.0008)	0.0027*** (0.0008)
% Change	3.92	3.96	3.92	3.96
Controls	No	Yes	No	Yes
Observations	5,000	5,000	5,000	5,000
Method	OLS	OLS	2SLS	2SLS

Notes: Robust standard errors are shown in parentheses. The level of observation is the cohort-ID number combination. All models include cohort dummies. The models in columns (2), and (4) include controls for origin (naturalized or indigenous) and district (the country is divided in 24 districts). In 2SLS models the instrument for *Conscription* is *Draft Eligible*. % Change for 2SLS models is calculated as  $100 \times \text{Estimate} / \text{mean crime rate of draft-ineligible men}$ . For intention-to-treat models, percent change is reported as  $100 \times \text{Wald estimate} / \text{mean crime rate of draft-ineligible men}$ .

- Compare columns (1) and (2) with (3) and (4) of Table 4.

- b) ¿How can you calculate the Local Average Treatment Effect using the information in Table 3 and the information in columns (1) and (2) in Table 4 (that is, without estimating an IV directly)?
- c) Explain the interpretation of the IV estimator as a local estimate, and compare this interpretation with the one from a sharp design in a regression discontinuity approach.
- 3) The government of Jamaica is about to start a program called “Women City” that has the objective of building facilities aimed to taking care of women problems (such as providing psychological help after domestic abuses, providing them with health facilities, etc). All women have the right to use the facilities. Provide a design that allows you to identify the causal impact of the program on any of the many outcomes of interest, such as future health. Please explain which are the treated and control groups, and possible limitations to your design. The program is starting next year.
- 4) You have to review a paper from a scholar that is interested in estimating the causal impact of migration on corruption (measured as paying bribes to public officials). The analysis is done at the household level, using data for 2010. Since migration is potentially endogenous in a model for corruption, the author proposes using migration in the 60s and 70s at the locality level as an instrument for current migration. Please explain if you agree or not with author’s identification strategy, and explain why.