Stockholm University

Department of Economics

Course name:	**Policy Analysis in Labour Econ.**
Course code:	**EC7414**
Examiner:	**Peter Fredriksson**
Number of credits:	**7.5 credits**
Date of exam:	**Sunday 11 December 2016**
Examination time:	**3 hours [09:00-12:00]**

Write your identification number on each paper (the number stated in the upper right hand corner on your exam cover).

Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. **No aids are allowed.**

The exam consists of 4 questions. Each question is worth 20 points, 80 points in total. For the grade E 36 points are required, for D 40 points, C 48 points, B 60 points and A 72 points.

Your results will be made available on your "My Studies" account **(**www.mitt.su.se) on 2 January 2017 at the latest.

Good luck!

Question 1

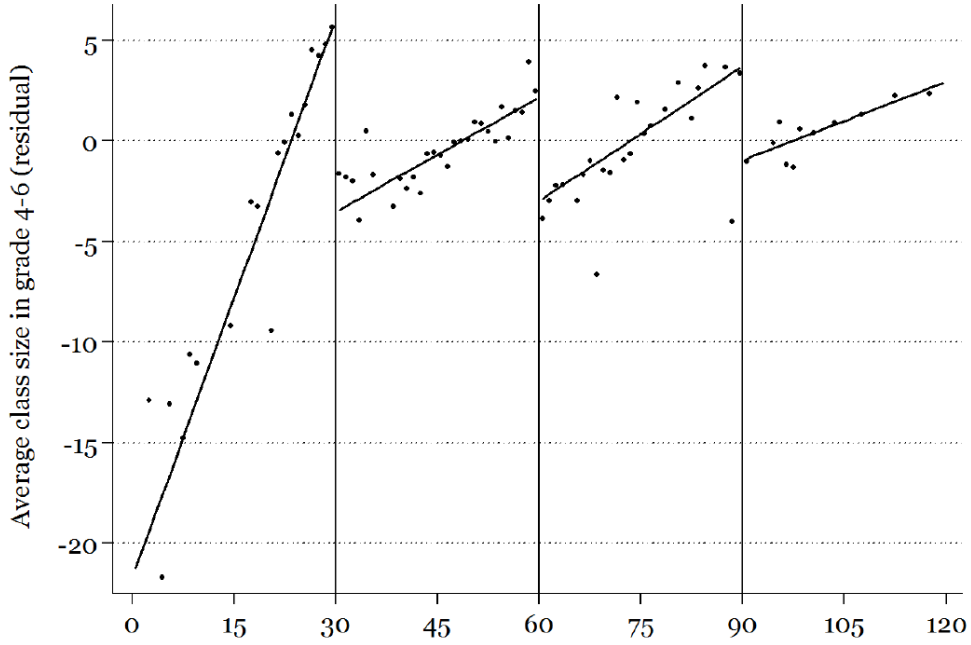
Suppose you are interested in estimating the causal effect of class size on pupil outcomes. You want to estimate the relationship:

$$Y_i = \beta_0 + \beta_1 CS_i + \beta_2 X_i + u_i$$

where *i* indexes individuals, *Y* denotes an outcome, *CS* class size, and *X* a set of control variables.

A number of researchers have noted that maximum class size rules can be useful for identifying the causal effect of class size. In the Swedish context, the rule stipulated that new classes were formed when enrollment in a school and grade surpassed multiples of 30. The figure below shows the estimated class size rule using Swedish data, where 30, 60, and 90 are the threshold values.

Figure 5. Class size by enrollment in grade 4



a) Explain intuitively how the maximum class size rule may help you in estimating the causal effect of class size.

b) What are the key identifying assumptions?

c) The paper by Fredriksson et al. (2013), among other things, reports the results of regressing: (i) teacher experience; (ii) average class size in grades 1-3; and (iii) average class size in grades 4-6, on an indicator for being above any of the thresholds (and relevant control variables). The Table below reports the results from these regressions

		Dependent variable	
	Teacher experience	Average class size grades 1-3	Average class size grades 4-6
	(i)	(ii)	(iii)
Above threshold	-0.312	-0.745	-6.625
	(0.622)	(1.034)	(0.752)

Notes: Standard errors within parentheses.

What does this evidence tell you about the validity of the research design? In particular, which identifying assumption does the evidence presented in each column shed light on?

d) The Fredriksson et al. paper also reports the result of regressing a child's cognitive ability at age 13 on mother's years of schooling. This yields an estimate of 0.069 (standard error: 0.006). Does this imply that you must control for mother's years of schooling when estimating the effect of class size using the maximum class size rule? Why or why not?

Question 2

a) Baker, Gruber, and Milligan (2008) analyze the introduction of highly subsidized, universally accessible child care in Quebec, Canada. What are the key results from this study on child outcomes?

b) Havnes and Mogstad (2011) examine a reform from late 1975 in Norway, which led to a large scale expansion of subsidized child care; see figure 1 below. Describe how Havnes and Mogstad use this expansion to examine the effects of childcare on the children's outcomes. What is the identifying assumption?

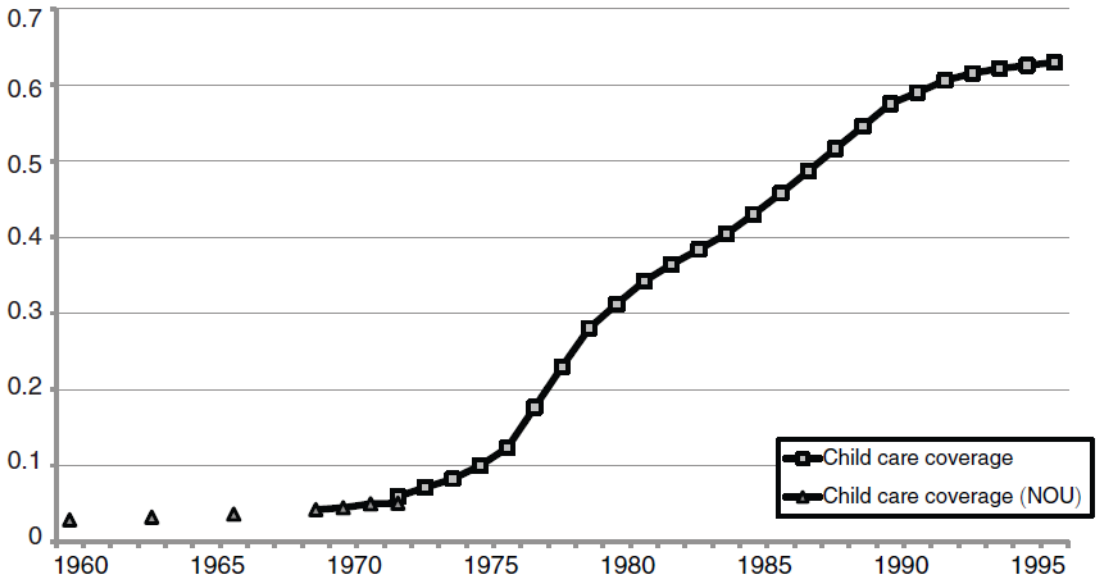


FIGURE 1. CHILD CARE COVERAGE RATE IN NORWAY 1960–1996 FOR CHILDREN 3–6 YEARS OLD

c) Havnes and Mogstad (2011) and Baker, Gruber, and Milligans (2008) conclusions about the effects of childcare on children's outcomes differ. Which are the key potential reasons according Havnes and Mogstad?

Question 3

Kleven et al. (2011) examine "the anatomy" of tax evasion. A standard model of tax evasion delivers the following optimality condition

$$p(e)(1+\theta)\big(1+\varepsilon(e)\big)=1$$

where $p(e)$ denotes the probability of getting caught when evasion is equal to e; θ the penalty if caught evading; and $\varepsilon(e)$ is the elasticity of the detection technology with respect to evasion, i.e.,

$$\varepsilon(e)\equiv\frac{p'(e)e}{p(e)}$$

a) Interpret the above optimality condition

b) A critique of the standard model is that the level of evasion typically observed in the data is too small to be consistent with the model (in the data, $p(e)$ and θ are typically small numbers). Explain how Kleven et al. (2011) amend the standard model such that it is consistent with the facts.

c) To what extent is the evidence reported in Kleven et al. (2011) consistent with the amended model? Substantiate your answer.

Question 4

Grönqvist (2012) examines the effects of a reform that affected contraception prices

a) Describe the reform and the empirical strategy Grönqvist (2012) use to examine the effects of the subsidy.
b) Provide a summary of the results of Grönqvist (2012).
c) Discuss the conclusions from his back-of-the-envelope calculations of the cost and benefits of the reform. According to Grönqvist some potentially important benefits and costs are not considered in his cost-benefit analysis. Provide examples of and discuss some of these potentially important unmeasured benefits and costs.