

Written Exam Economics summer 2021

Advanced Development Economics: Micro Aspects

Date: 26 June (10am) - 28 June (10am) (48 hours)

This exam question consists of 3 pages in total (including this front page)

Answers only in English.

A take-home exam paper cannot exceed 10 pages – and one page is defined as 2400 keystrokes (including spaces). Note that the revised mandatory assignment done during the semester has to be uploaded separately as an attached file, and that the mandatory assignment is not included in the max 10 pages.

The paper must be uploaded as one PDF document. The PDF document must be named with exam number only (e.g. '1234.pdf') and uploaded to Digital Exam.

Be careful not to cheat at exams!

Exam cheating is for example if you:

- 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
- Reuse parts of a written paper that you have previously submitted and for which you have received a pass grade without making use of quotation marks or source references (self-plagiarism)
- Receive help from others in contrary to the rules laid down in part 4.12 of the Faculty of Social Science's common part of the curriculum on cooperation/sparring

You can read more about the rules on exam cheating on your Study Site and in part 4.12 of the Faculty of Social Science's common part of the curriculum.

Exam cheating is always sanctioned by a written warning and expulsion from the exam in question. In most cases, the student will also be expelled from the University for one semester.

QUESTION 1: A new strategy for an NGO (maximum of 3 pages in total)

An NGO working with education and health of children in the primary and secondary school age group in a developing country has asked you to comment on a new strategy to improve enrolment rates and learning. The proposed strategy reads as follows:

“We seek in our new strategy to improve enrolment rates and learning of children in our program villages through five channels: 1) Ensure that all program villages have a primary school and that children can easily access a secondary school by bus or bicycle when no secondary school is available in the village. 2) Provide free lunch at all primary schools. 3) Focus on student health to facilitate positive spillover effects and better learning; 4) Put small fees on NGO-driven primary schools and transport to secondary schools in order to incentivize student effort. 5) Improve economic opportunities of parents, as international comparisons suggest that children in higher income countries perform better on standardized tests.”

In particular, the NGO is interested in an evidence-based approach for improving enrolment rates and learning. Therefore, you should discuss the strengths and weaknesses of the proposal (and your own suggestions if you feel key actions are missing) in relation to relevant empirical evidence in the literature. In order to motivate these empirical studies, it may be beneficial to introduce and briefly comment upon a theoretical framework before discussing the empirical evidence. You may also want to recommend additional analyses based on local data before implementing the new strategy (here you should be concrete).

Answer:

Present and briefly comment on the Todd and Wolpin (2003) framework from the lecture slides. Discuss empirical evidence from the literature related to improving quantity and quality of education, focusing on the proposals in the exam document. In particular, be very critical towards the fourth and fifth proposal, as even small fees tend to worsen enrolment and international correlation studies are not sufficiently informative about learning effects from economic opportunities.

Recommend context-specific analyses (for instance a pilot study), as context has proven to be essential in this literature. Further comment on the potential issues of this suggested analysis. It should also be taken into account how realistic the proposed analysis is.

QUESTION 2: Health – Empirical Exercise

Focus on the article of Field, Robles, and Torero (2009). “Iodine Deficiency and Schooling Attainment in Tanzania”, American Economic Journal: Applied Economics, 1(4), 140-169.

Table 3 in Field, Robles, and Torero (2009) (FRT) includes the paper’s baseline results on the impact of mothers receiving iodine supplementation during the first trimester of pregnancy. Part A considers the impact without accounting for the district coverage rate. Parts B and C account for the district coverage rate by interacting this variable with the probability of a child’s mother being protected by the iodine supplementation program.

Question 2A: Summarize the main conclusions drawn from Table 3 columns (1), (2), (3), (7), (8), and (9). In particular, explain why the results in (1)-(3) differ from the results in (7)-(9).

Answer:

Protection from iodine deficiency disorder correlates positively with grade attainment. This result is most pronounced for girls in line with laboratory work. As not all women were covered by the program, but we consider all children within the same cohort and district to be equally protected, accounting for the district coverage rate increases the magnitude of the effect. Columns (7)-(9) assumes that untreated mothers were as likely to get pregnant as treated mothers, which may overestimate the results.

Question 2B: The data provided in this exam assignment includes the variables needed to replicate Table 3 as seen during the exercise classes. In FRT, it is argued that districts with initially higher goiter rates should experience larger effects from the iodine supplementation program. Explain why this is the case. Based on the provided data, also investigate whether the hypothesis is true and further examine other types of relevant heterogeneity analyses.

Answer:

The student should interact the probability of being protected with district goiter rates in 1980. This analysis will show, in line with expectations, that districts with higher goiter rates benefit most from the iodine supplementation program. Other heterogeneity analyses could relate to socio-economic status of the household (education level, food scarcity, and type of roof) or urbanization (urban/rural status, distance to health clinic, and distance to secondary school).

Question 2C: The data provided allows you to study other parts of the paper as well. The large effects on grade attainment suggest that children who were not protected from iodine deficiency disorder suffered from severe rather than only mild deficiencies. These severe deficiencies should arguably affect health outcomes of children. While you are not expected to replicate the results in Table 6, do your own analysis of the impact of iodine supplementation on health outcomes. Are your results in line with those of the paper and are they in line with the theory that iodine supplementation improve health outcomes?

Answer:

The conclusion ought to be that the program did not improve health outcomes. This is in line with the results in the paper, but it is in contrast to the theory of the impacts of severe deficiencies.

Question 2D: Discuss the validity and robustness of the results in FRT.

Answer:

Discuss the issues presented in Bengtsson, Sävje, and Peterson (2020) (both the narrow and wide replication analyses). Table 2 further allows the student to comment on the severity of these issues by accounting for them both separately and cumulatively.

The very good assignment further discusses whether the results in FRT can be 'debunked'. As the narrow replication analysis includes fixing of coding errors and other issues that most economists would agree should be fixed, the results from this analysis has the potential to 'debunk' the conclusions reached by FRT. The wide analysis does not have this potential. Since the impact of iodine supplementation is insignificant in the narrow analysis, the replication study can be argued to 'debunk' the study by FRT.