Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Three Essays on the Economics of Education
Type of Defense:	**DEFENSE**
Date of Pre-Defense	February 15, 2023

Address the following questions in your report, please:

a) Can you recognize an original contribution of the author?
   Yes, and this is reflected by the fact that two of the chapters have already been published in respected journals: Oxford Bulletin of Economics and Statistics and Review of Economics and Statistics.

b) Is the thesis based on relevant references?
   Yes, Olesia handles all the relevant references well.

c) Is the thesis defendable at your home institution or another respected institution where you gave lectures?
   Yes, I think the thesis would be defendable at good European universities.

d) Do the results of the thesis allow their publication in a respected economic journal?
   Yes, as I have noted, two of the chapters have already been published. The last chapter is publishable as well.

e) Are there any additional major comments on what should be improved?
   Regarding the first two chapters, no. Regarding the final chapter, I think Olesia did her best to address the comments of the referees.

f) What is your overall assessment of the thesis? (a) I recommend the thesis for defense without substantial changes, (b) the thesis can be defended after revision indicated in my comments, (c) not-defendable in this form.
   I recommend the thesis for defense without substantial changes.

(Note: The report should be at least 2 pages long.)

Olesia has revised her thesis, particularly the third unpublished chapter, in response to comments raised by her referees and those raised during her pre-defense. I greatly appreciate her detailed response to the referees, which even involves recalculation of the already published materials to strengthen her case. She has visibly improved the text of the third chapter and extended her analysis using the propensity score matching method and two cohort analyses as additional robustness checks. I am happy with the resubmission. I can only repeat my previous statements made for the pre-defense:

Olesia is my best PhD student. She published two papers in prestigious journals: Oxford Bulletin of Economics and Statistics and, especially, Review of Economics and Statistics (REStat). To publish in REStat is a great achievement for any PhD student, including those studying at top universities in the US and UK. Indeed, such a publication is exceptional in the entire context of Czech academic economics, and only a few Czech economists have been able to publish in better outlets.

But excellent research is only one of Olesia's strengths. During the course of her studies, she worked as a teaching assistant for difficult courses (such as Advanced Microeconomics), and her work has been highly praised by the lecturers. I also have to note that Olesia was able to do that while taking care of her young daughter, and in October 2022 her son was born. I believe there is no doubt that Olesia deserves to defend her thesis and did her best to respond to the comments raised during the pre-defense.

The first paper included in the dissertation, Chapter 2, is a meta-analysis of the relationship between tuition fees and university enrollment. The paper is co-authored, but as one of the co-authors I can attest that Olesia's contribution to this piece of research has been decisive. In the paper we find that the demand for university education is on average highly inelastic, with the elasticity close to zero in most contexts. Because not all studies report elasticities, Olesia uses partial correlation coefficients for comparability, but she also includes a robustness check with elasticities (and, consequently, a more limited sample).

The results show strong publication bias against unintuitive results (negative and statistically insignificant estimates of elasticities). After correction for the bias, the elasticity is close to zero on average. But Olesia also takes into account that the elasticity is estimated by various researchers for various context. So she controls for heterogeneity by accounting for differences in estimation characteristics, design of the demand function, data specification, and publication characteristics. To account for the model uncertainty inherent in such an exercise, she uses Bayesian model averaging. She finds that the elasticity is larger for female than male students and also larger for public than private universities. I also appreciate the use of instrumental variables to correct for publication bias in meta-regression.

The second paper included in the dissertation, Chapter 3, is a meta-analysis of the elasticity of substitution between skilled and unskilled labor. This is the paper published in REStat and would be the job market paper if Olesia sought employment in academia. Once again, as a co-author of the paper I can attest that Olesia's research contribution has been crucial. The paper

took almost two years of full-time work for at least some members of the team, and the revision for REStat essentially meant writing a new paper. I should also note that one of the referees (who waived his anonymity) was Isaiah Andrews, the recipient of the John Bates Clark medal in 2021 and the brightest start in economics meta-analysis, currently also a co-editor at the AER. So the paper went through the most rigorous peer-review procedure possible in economics meta-analysis.

In the paper Olesia compares publication and attenuation bias, which is a completely novel idea. The identification argument rests on the comparison between OLS, IV, and natural experiment estimates. If measurement error in this literature is classical and IV estimates are generally well specified, then IV estimation corrects for both attenuation and other endogeneity biases. OLS corrects for nothing, and natural experiments correct for endogeneity biases with the exception of attenuation bias. Then the differences between OLS, IV, and natural experiments jointly identify the extent of attenuation bias. Of course, these estimates have to be first corrected for publication bias using up-to-date techniques in meta-analysis. The results show that attenuation bias is important, but that publication bias is stronger.

Finally, the last paper included in the dissertation, Chapter 4, focuses on the returns to higher education in Russia after a reform that unified the state exam at Russian schools. Olesia shows that the reform improved the returns for students only in selected geographical regions. The chapter uses credible quasi-experimental identification techniques (now extended by propensity score matching), and I have no major objections to the analysis carried out in the paper.

Date:	April 4, 2023
Advisor's Signature	
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