Report on **Bachelor Thesis**

Institute of Economic Studies, Faculty of Social Sciences, Charles University

Student:	Marek Daňa
Advisor:	Doc. Zuzana Havránková
Title of the thesis:	Teachers Matter: A Meta-Analysis

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

Short summary

The thesis explores the relationship between teacher experience and student achievement through a comprehensive meta-analysis. By assembling a dataset of 131 estimates from 19 studies, the thesis examines the effect of teacher experience on student test scores. The author employs various statistical methods, including linear and non-linear techniques, to address publication bias and heterogeneity. The findings suggest that after correcting for publication bias, the effect of teacher experience on student achievement is either negligible or non-existent.

Contribution

The thesis contributes to the field by addressing a gap in the literature—namely, the potential inflation of the teacher experience effect due to publication bias. Marek's work is commendable, especially considering the limited number of studies and observations available. However, the contribution is somewhat weakened by the small sample size (19 studies and 131 observations), which limits the robustness of the meta-analysis. Additionally, the thesis could benefit from a more explicit emphasis on its unique contributions to the existing body of knowledge.

Methods

Even though Marek did not have much observation, he did a really nice job. His comprehensive analyses cover all types of methods. The methodological approach is one of the strongest aspects of this thesis. Marek employs a comprehensive range of techniques to assess the presence of publication bias and to correct for it, including both traditional linear methods and more modern non-linear approaches. Using Bayesian and frequentist model averaging techniques further strengthens the analysis by accounting for heterogeneity. The thorough application of these methods demonstrates a high level of competence and understanding.

Literature

The literature review in the thesis demonstrates a good understanding of the topic and includes several key studies, such as Hanushek et al. (2004, 2011) and Hanushek & Rivkin (2006). However, the review tends to focus heavily on a few select studies throughout the thesis, leading to an overreliance on these sources and the omission of other relevant research.

Important studies, such as Rockoff (2004), which provides early empirical evidence on the impact of teacher experience, and Chetty, Friedman, and Rockoff (2014), which examines the long-term effects of teachers on student outcomes, are not featured. Additionally, research by Kane, Rockoff, and Staiger (2008) and Boyd et al. (2008), which analyze teacher experience in the context of New York City schools, as well as Rivkin, Hanushek, and Kain (2005), would have added further depth to the discussion.

1. **Hanushek, E. A. (2011):** "The economic value of higher teacher quality." *Economics of Education Review,* 30(3): 466–479.
2. **Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004):** "Why public schools lose teachers." *Journal of Human Resources,* 39(2): 326–354.
3. **Hanushek, E. A., & Rivkin, S. G. (2006):** "Teacher quality." In *Handbook of the Economics of Education,* 2: 1051–1078.
4. **Rockoff, J. E. (2004):** "The impact of individual teachers on student achievement: Evidence from panel data." *American Economic Review,* 94(2): 247–252.
5. **Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014):** "Measuring the impacts of teachers I: Evaluating bias in teacher value-added estimates." *American Economic Review,* 104(9): 2593–2632.
6. **Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008):** "What does certification tell us about teacher effectiveness? Evidence from New York City." *Economics of Education Review,* 27(6): 615–631.
7. **Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2008):** "Teacher preparation and student achievement." *Educational Evaluation and Policy Analysis,* 30(4): 416–440.

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8. **Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005):** "Teachers, schools, and academic achievement." *Econometrica,* 73(2): 417–458.
9. **Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007):** "How and why do teacher credentials matter for student achievement?" *CALDER Working Paper No. 2.*
10. **Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010):** "Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects." *Journal of Human Resources,* 45(3): 655–681.

Manuscript form

The thesis is generally well-structured and written, but improvements could be made in some areas. For example, Chapter 2 could be integrated into the introduction or the data chapter to streamline the narrative. Tables 3.2 and 3.3 would be more informative if they included the number of studies per subsample, and merging certain tables (e.g., Tables 5.2 and 5.3, Tables 3.2. and 3.3,..) could enhance clarity. A few minor typos and some complex sentences slightly detract from readability, but these are relatively minor issues.

Overall evaluation and suggested questions for the discussion during the defense

Overall, Marek's thesis meets the requirements for a bachelor's thesis at the Institute of Economic Studies, Faculty of Social Sciences, Charles University. The thesis demonstrates a solid understanding of meta-analysis and contributes valuable insights to the field. I recommend the thesis for defense and suggest a grade of A. The results of the Turnitin analysis do indicate 27 % overall text similarity with other available sources. However, upon closer look one can see it's not due to any form of plagiarism.

Suggested Questions for the Defense:
1. How would the results of your meta-analysis change if more studies or observations were available? Do you think the conclusions might differ significantly?
2. You mention, "Assuming the linearity of this effect, having a teacher with an extra ten years of experience would result in a 20% increase in student test score standard deviation." Do you believe in the linearity of the relationship between teacher experience and student achievement? Why or why not?
3. Why do you think the studies by Miller et al. (2008) and Kukla-Acevendo (2008) differ so much in their reported effects of teacher experience?
4. What is the difference between the Meta-Analysis Instrumental Variable Estimator (MAIVE) and the standard IV method you used? How do these differences affect your results?
5. In your analysis, you found a negative sign of the logarithm of citations (ln(citations)) on the effect size. How would you explain this negative relationship?

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SUMMARY OF POINTS AWARDED *(for details, see below):*

CATEGORY		POINTS
Contribution	*(max. 30 points)*	28
Methods	*(max. 30 points)*	30
Literature	*(max. 20 points)*	17
Manuscript Form	*(max. 20 points)*	18
TOTAL POINTS	*(max. 100 points)*	**93**
GRADE	**(A – B – C – D – E – F)**	**A**

NAME OF THE REFEREE: Kantová Klára

DATE OF EVALUATION:

digitally signed,
27.8.2024, Kantová Klára

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Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Overall grading:

TOTAL	GRADE
91 – 100	**A**
81 - 90	**B**
71 - 80	**C**
61 – 70	**D**
51 – 60	**E**
0 – 50	**F**