

Advisor's Report on Dissertation Thesis

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Author:	Petr Polák
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Title of the Thesis:	Essays In Applied Meta-Analysis
Type of Defense:	DEFENSE
Date of Pre-Defense	April 22, 2020

Address the following questions in your report, please:

a) Can you recognize an original contribution of the author?

Yes, I especially appreciate that two chapters of the dissertation are solo-authored. In addition, these two papers have already been published in good international journals.

b) Is the thesis based on relevant references? **Yes. This is given by the topic of the dissertation (meta-analysis), which puts emphasis on a broad coverage of the literature. Moreover, Petr uses up-to-date methodology.**

c) Is the thesis defendable at your home institution or another respected institution where you gave lectures? **I believe so, especially given the two solo-authored published chapters.**

d) Do the results of the thesis allow their publication in a respected economic journal? **As I have noted, two of the three papers have already been published. The third one is eventually publishable in international journals such as the Review of World Economics.**

e) Are there any additional major comments on what should be improved? **Since Petr has consulted his dissertation with me on a regular basis, I have no objections to the current version of the thesis.**

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 any changes.**

My evaluation of the final version of Petr Polak's thesis is very similar to that which I provided for the pre-defense version. The referees did not voice substantial objections to what Petr was doing, and he therefore has not made substantial changes in the thesis. In general I think Petr has reacted adequately to the comments raised at the pre-defense. I appreciate the extended Introduction, which features an honest discussion of the problems in the first two (already published) chapters. These problems reflect the progress made in the field of meta-analysis in recent years. I also appreciate the detailed response to referees, which has 18 pages in the final version of the thesis (though that count includes the referees' previous comments).

Petr's thesis is, I believe, a good example of how a dissertation thesis should look. At 169 pages, its length is adequate, the thesis is beautifully typeset in LaTeX, well-written, and contains a clear introduction. More importantly, though, the thesis demonstrates Petr's own contribution to our knowledge in economics. Two of the three chapters are solo-authored, and both have been published in good international journals. The third chapter is co-authored, unpublished, but shows Petr's grasp of up-to-date techniques in the field.

All three chapters are tied together by the use of the same methodology: meta-analysis, the set of quantitative techniques of research synthesis. By definition, meta-analysis will always remain a small field complementing primary research. Nevertheless, given the widespread publication bias in economics and other field, meta-analysis is indispensable: without correcting for publication bias one cannot take proper inference from studies published even in the very best economics journals. For example, Ionannidis et al. (2017, *Economic Journal*) show that a typical estimate reported in economics is exaggerated twofold because of publication bias.

The first chapter in Petr's dissertation, "The Productivity Paradox: A Meta-Analysis", examines the effect of information technology on productivity. Petr collects more than 800 estimates from 70 studies and shows that the literature suffers from strong publication bias. After correcting for the bias, the literature seems to be consistent with an average elasticity of 0.3 %. Petr contrasts his result to that of a previous meta-analysis on the same topic, which did not correct for publication bias and found the effect to be ten times stronger. The paper was published in *Information Economics and Policy*.

The second chapter in the dissertation, “The Euro's Trade Effect: A Meta-Analysis”, investigates the effect of euro adoption on international trade. Petr collects more than 3,000 estimates and finds that, after correcting for publication bias, the mean effect is between 2 and 6 %, which is much less than estimates used previously for policy purposes. The paper was published in the Journal of Economic Surveys; one of the referees (who waived his anonymity) was Andy Rose of Berkeley.

The third chapter, “How bad are trade wars? Evidence from trade costs”, examines the trade costs elasticity, which ranks among the most important parameters in international trade. In the 2013 Handbook of Computable General Equilibrium Modeling, Hillberry and Hummels put it in the following way: “it is no exaggeration to say that [the elasticity is the most important parameter in modern trade theory.” Petr and his co-authors collect 1600 estimates from 71 studies and show that, after correcting for various biases, our best guess about the elasticity should lie in the interval between -1 and -2. In this recent paper Petr and his co-authors use modern methods including Bayesian model averaging.

In sum, I believe this is a very good dissertation that can now be defended without changes.

Date:	November 4, 2020
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