# Opponent's Report on Dissertation Thesis

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| Author: | **Josef Bajzík** |
| Advisor: | Prof. PhDr. Tomáš Havránek Ph.D. (IES) |
| Title of the Thesis: | Essays on International and Financial Economics |
| Type of Defense: | **DEFENSE** |
| Date of Pre-Defense | February 14, 2024 |
| Opponent: | Doc. Ing. Karel Brůna Ph.D. (VŠE) |

Address the following questions in your report, please:

a) Can you recognize an original contribution of the author?
b) Is the thesis based on relevant references?
c) Is the thesis defendable at your home institution or another respected institution where you gave lectures?
d) Do the results of the thesis allow their publication in a respected economic journal?
e) Are there any additional major comments on what should be improved?
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.

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

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The present text is a review of the dissertation entitled Essays on International and Financial Economics, authored by Mgr. Josef Bajzík. The thesis was written under the supervision of Prof. Tomáš Havránek, PhD. The review is prepared for the purpose of major defense within the doctoral programme of Economics and Finance at the Institute of Economic Studies, Faculty of Social Sciences, Charles University.

The dissertation is a set of three articles published in prestigious foreign journals indexed in Web of Science in high quartiles (two articles indexed in Q1(D2) and one in Q2 in the respective year according to the AIS factor). Mgr. Josef Bajzík is the sole author of one of the articles and co-author of two articles included in the dissertation. The individual articles form the main chapters of the dissertation, which is further provided with a unifying introduction, a conclusion and a review of the cited literature. The unifying theme of the dissertation is not, as is usually the case, a particular set of interrelated economic problems, but the application of the method of empirical analysis in the form of meta-analysis, which allows for the examination and evaluation of the properties of empirical estimates made by other authors in the form of existing studies on a common topic.

The meta-analysis is applied in the dissertation to three sub-economic problems, between which it would be difficult to find a direct link. The first paper, Estimating the Armington elasticity (published in the Journal of International Economics in 2020, together with T. Havránek, Z. Irsová, and J. Schwarz) focuses on the elasticity of demand for domestic and foreign goods (the so-called Armington elasticity). Existing research provides highly volatile elasticity results with a mean value close to one, with the magnitude of the elasticity and its volatility increasing over time, and with elasticities differing significantly for short and long periods. Estimates show a strong publication bias (about 50%). The effect of data aggregation and frequency, the use of cross section data, time series and panel data, and multi-equation models versus single-equation models are tested. The effect of publishing research in a journal versus other formats (typically working papers) and their citation rates are also considered. Estimates of elasticities for individual countries are made. The estimates show that removing publication bias leads to elimination of differences between short-run and long-run elasticities. At the same time, the effect of a number of tested data characteristics on the reported elasticities is demonstrated.

The second paper, Bank Capital, Lending and Regulation (published in the Journal of Economic Surveys in 2023 together with S. Malovaná, M. Hodula and Z. Gric) focuses on estimates of the impact of rising bank capital or rising capital requirements on the volume of bank lending in response to rising micro and macroprudential bank capital requirements. Bank capital is considered as a ratio of total capital to assets and as a regulatory requirement in the form of capital adequacy ratio and as a total regulatory capital requirement relative to risk-weighted assets. The differences in the parameters identified in the analysed studies are again significant, as are the differences in the impact of the respective type of capital or capital requirement. Publication bias is identified only for the total capital requirement. Among the observed characteristics explaining the heterogeneity in parameter magnitude, the size of the dataset, the use of country-specific data, the model used for estimation and the factor of research publication in a journal are particularly influential. Significantly higher positive values of the parameter are shown by the estimates for corporate credit. The results also differ depending on whether they are estimated in the aftermath of the global financial crisis, when new capital requirements were applied to a much greater extent, and on whether banks use internal risk models to determine risk-weighted assets. The results of the analysis are then used to estimate the mean of the parameters for different types of capital and credit and for periods of extremely low interest rates, incorporating publication bias.

A recent paper exclusively authored by Mgr. Josef Bajzík on Trading volume and stock returns: a meta-analysis (published in the International Review of Financial Analysis in 2021) addresses the much-studied issue of the effect of trading activity in a financial instrument on the rate of return. Published studies show an effect that is on average zero and decreasing over time with increasing volatility. Again, publication bias and the effect of data characteristics and estimation methods on the reported parameter results are identified. The country of origin of the stock and the type of stock/issuer of the stock also operate, the effects of trading volumes on returns are systematically larger in emerging economies. Time series with higher frequency generally show a larger positive effect, as do stocks of non-bank firms. The effects arising from the publication of research in the cited journals do not appear to be significant.

The dissertation of Mgr. Josef Bajzík's dissertation is highly superior and competitive with many high-quality scientific papers, as evidenced by the fact that it consists of three articles published in high quartile foreign scientific journals indexed in WoS. The dissertation thesis has a quality which would meet the criteria not only at Prague University of Economics and Business but also much higher-rated universities in the world. The thesis is very carefully crafted, each step in the research is given due attention and all procedures are duly explained and referenced to sources. The text of the dissertation is thus logical and very easy to understand. All the steps taken by the author are convincingly argued and there are no weak points in the text of the articles. A certain limitation is the essentially exclusive attention to the empirical side of the problems analysed, so less space is naturally devoted to the theoretical discussions that have developed around the relevant problems in the past and that are behind the theoretical justification of the different parameter magnitudes.

I appreciate the almost extreme range of relevant empirical studies treated, the author uses as a sample of data in individual articles up to more than 3000 published estimates contained in articles and working papers, which he searches on the basis of review articles and using keywords within Google Scholar, he also makes targeted use of studies published in recent years, which are not so often cited and contained in review articles. It should also be appreciated that the data sample includes studies written in languages other than English. It typically uses more than 40 different criteria to explain the heterogeneity of results. Processing data of this magnitude, although it seems obvious in the articles, is very laborious and time-consuming, so I consider it appropriate to evaluate positively this aspect of the author's work.

The presented work is valuable and beneficial especially in the author's comprehensive approach consisting in a consistent application of meta-analysis methodology to the selected problems. Mgr. Josef Bajzík shows a perfect knowledge of this group of methods throughout his dissertation, using a wide range of partial approaches to calculate the mean value of parameters (Bayesian and frequentist methods of model averaging), estimating the size of publication bias (funnel plots, funnel asymmetry tests, FAT-PET and PEESE, Top 10 techniques, WAAP, study-level fixed effects and multilevel estimation techniques, etc.) or correcting publication bias (meta-regression technique, OLS and WLS methods, non-linear techniques). Very detailed analyses are performed mainly to explain heterogeneity in parameter estimates based on partial characteristics of the data (e.g., degree of aggregation, cross section vs. time series data, length and frequency of time series), estimation methods, omission of endogeneity, type of model used in estimation, or the effect of publishing estimates in high-quality and cited journals. The presented results are of high value, without conducting such extensive research the findings are not even intuitively possible, and the importance of the research conducted is also evident due to the high citation rate of the papers, despite the very short time since their publication.

Given that the articles presented in the dissertation have undergone a rigorous peer review process in high-quality scientific journals, there is no point in pointing out the minor details that come to the reviewer's mind when reading them. The author no longer has the opportunity to incorporate these comments into the text of the articles and, as stated above, the quality of the work is unquestionable. I would only mention one specific comment on the second paper, where the results show a heterogeneous effect of capital, or capital requirement, on bank lending (e.g., higher sensitivity of corporate loans), which may be significantly affected not only by banks, i.e., the supply of credit, but also by the behavior of credit demand, for which the authors did not find room when testing for heterogeneity factors in the parameter estimates. In other words, the effect of capital on the volume of credit extended may be significantly strengthened or weakened by the extent to which the interest of bank customers in bank credit changes in parallel with the change in the supply of credit, given the current stage of the economic (or financial) cycle (see, for example, the countercyclicality of the business cycle as a factor influencing the demand for credit (especially by non-financial

firms) and the risk aversion cycle of banks influencing the credit supply cycle (see the financial accelerator theory)).
For the minor defense, I asked the author of the dissertation to elaborate on the conclusion of the thesis, where the author could elaborate more on the broader significance of the findings, he has made in the context of the issues analyzed. The time gap since the articles were published could have given the author more perspective, and he could have concluded the thesis by expressing his view on the significance of his own research, which is undisputed, and sharing his opinion on the applicability of the results in the broader context of contemporary economics. At the same time, the introduction of the dissertation could have elaborated more on the context from which the author's interest in the subject emerged and the key theoretical or empirical publications that inspired the author to work on the topics in question. It would also be possible to anchor the problems analysed in the introduction of the thesis in a broader overview of the theories that relate to these problems.

After reviewing the final version of the dissertation thesis, I confirm that the author followed my recommendations and expanded both parts of the thesis in a way that I am fully satisfied with them and I have no longer any other comments to this dissertation thesis.

On the basis of the above, I recommend the dissertation thesis for defense without substantial changes.

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| Date: | September 11, 2024 |
| Opponent's Signature: | |
| Opponent's Affiliation: | Doc. Ing. Karel Brůna Ph.D. (VŠE) |