

Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Topics in Yield Curve Modeling
Type of Defense:	DEFENSE
Date of Pre-Defense	November 18, 2020

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 defensible 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-defensible in this form.

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

The dissertation consists of three essays with the underlying topic of the yield curve and its determinants from the area of both macroeconomic and non-macroeconomic domains.

The first paper analyzes daily movements in the U.S. yields and links them to the news in a form of the analytic commentaries identified in headlines of financial and economic news reports. Such news are considered as triggers of the yields movements. The novelty rests in considering the news-based triggers as priors within Bayesian inference. The key message of the analysis is that importance of shocks that are of a non-business cycle nature (eg. shifts in portfolio allocation and capital flight to or from the U.S. Treasuries) have been increasing markedly over the last decade.

The second paper provides assessment of the link between the fiscal policy and the yield curve, again in the U. S. The aim is to evaluate impact of the fiscal shocks, in terms of perceived changes in future fiscal policy, along with the yield factors obtained from an affine yield curve model and several control variables. The key message is that expansionary U.S. fiscal policy innovations (at the time they are announced or become expected) result in a temporary drop in yields due to increased uncertainty; the yields revert after the fiscal policy is realized.

The third paper builds on the first one and proposes a method to improve the decomposition of the government bond yield curve in a small economy with a relatively shallow government bond market (Czech Republic). The decomposition of the government bond yield curve into its components is done by using a shadow-rate affine term-structure model and interest rate and credit default swap quotations. Practical use of the method is presented via VAR model.

All three papers definitely represent an original contribution of the author to the field.

The dissertation is written in a competent manner and shows that the author has mastered his theoretical as well as analytical skills. The work is well structured, and the introduction provides a clear overview of the dissertation with a brief educative part on the yield curve itself. The references are plentiful, and their use demonstrates that the author is well acquainted with the contemporaneous literature in the field.

The dissertation, as it stands, is without doubt defensible at the IES. The dissertation ranks more than favorably with dissertations written in this particular field in other foreign institutions and universities where I have taught at, or served as a dissertation committee member. Some suggestions for potential improvement are mentioned in the later part of this report.

The first paper (Chapter 2) was already published in the *North American Journal of Economics and Finance* (2020). It is solid and well executed solo-authored paper, with clear contribution and economically sound results. I have no further comments as the first paper is a complete and truly innovative piece of research.

The second paper (Chapter 3) represents a co-authored work in progress that have been so far published in the WP series of the Slovak National Bank (2019). In my Pre-defense report I mentioned several issues that were meant as suggestions for further improvement. From reading the revised version, I am pleased that Adam accounted for my comments as well as those of other referees. The current version of the paper is in advanced stage and after it goes through an editorial process, I have no doubt that it will be published in a high ranking academic outlet specific to the field.

The third paper (Chapter 4) was published in the *Czech Journal of Economics and Finance* (2019). It is a country-specific analysis that builds partly on the first paper. It is well structured and complete co-authored paper, with a clear contribution. For that, I do not have any further comments to raise.

Finally, my minor comments related to the structure and format of the dissertation were also accounted for. Hence, I do not have other comments in this area.

Overall, my assessment of the dissertation is very favorable and I recommend the thesis for defense without other changes. The dissertation is of high quality and represents a valuable contribution to the field.

Date:	January 25, 2021
Advisor's Signature:	Digitally signed by Evžen Kočenda
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