

Opponent's Report on Dissertation Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University
Opletalova 26, 110 00 Praha 1, Czech Republic
Phone: +420 222 112 330, Fax: +420 222 112 304

Author:	Adam Kučera
Advisor:	Prof. Ing. Evžen Kočenda M.A., Ph.D., DSc.
Title of the Thesis:	Topics in Yield Curve Modeling
Type of Defense:	DEFENSE
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Opponent:	Prof. Roman Horváth Ph.D.

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 represents a collection of research papers examining the complex interactions between macroeconomic and financial sphere. The chapters evaluate how various shocks (especially fiscal shocks) affect yield curve, apply it to the different datasets and use different modelling frameworks. There are 3 chapters based on 3 research papers accompanied by the general introduction.

I was quite satisfied with the version submitted to the pre-defense. The current version of the thesis further improved and incorporated all my comments in a satisfactory manner (the summary of the comments and the reaction to these comments is available at the end of dissertation).

Some chapters have already been published as the articles in journals with impact factor and the preliminary version of one of the chapters even received a prestigious award – 1st place in the Young Economist competition of the Czech Economic Society. These achievements clearly suggest that there is an original contribution in these articles. The chapters appeared in the North American Journal of Economics and Finance and in the Czech Journal of Economics and Finance. Two chapters are co-authored, while one chapter is solo authored (the one published in the North American Journal of Economics and Finance). The last chapter is not published in

journal yet but, in my opinion, relative to other chapters it has a highest potential in terms of in which journal it can be published.

The thesis is easy to follow. I appreciate the pedagogical approach that the introductory section takes. It clearly explains the main concepts. The thesis reads as written by the experienced researcher, who knows the relevant literature excellently. I enjoyed reading the thesis and was happy to see how seriously and comprehensively the doctoral student approaches difficult and complex macro-finance modelling issues. The knowledge of econometric modelling issues related to macro-finance question, that the doctoral student possesses, is exceptional.

The chapter 2 examines the effect of news of the yield curve at the daily frequency focusing on the U.S. Treasury yield volatility. The chapter evaluates the effect of macroeconomic news, including the central bank news. The chapter adopts a dynamic Nelson-Siegel model, i.e. a common approach in this body of macro-finance literature and estimates a time-varying parameter regression model with Bayesian approach. I appreciate that the chapter is solo authored to further demonstrate that the doctoral student has grown into independent researcher which can publish in decent journals with impact factor.

The ability to correctly estimate these types of models (which feature Bayesian econometrics) show that the doctoral student has an excellent knowledge of econometric methods as well as the deep knowledge of macro-finance models. The chapter finds a decreasing role of domestic macroeconomic factors in driving the yield curve in the U.S. and reminds us how globalized the contemporary financial markets are (capital flight).

Chapter 3 is an important contribution, which examines the effect of various types of fiscal shocks on the yield curve. It is typically well accepted that monetary policy influences the yield curve, especially at its short end. This chapter shows that fiscal policy is also an important determinant of the yield curve movements. The chapter proposes vector autoregression model framework and use it for the US data. The model addresses a number of important features, for example, the existence of precautionary responses of economic agents to the government policies.

The results in chapter 3 provide some interesting findings. The chapter finds that government policies and geopolitical uncertainty influence the yield curve also at its long end. This is important results suggesting that political stability can contribute to the long-term financial planning. In general, the result itself is not new but it is quite novel within the macro-finance literature. Overall, in my view, the chapter 3 has the highest research and journal publication potential.

Chapter 4 examines the driving forces of the Czech government bond yields. It is a nice policy-oriented contribution and extensively analyzes the specificities of the Czech market. It argues that negative yields that prevailed on the market for some time period cannot be fully explained by the expectations. The chapter shows how portfolio effects related to the lifting of the exchange rate floor policy matter. The chapter provides a decomposition of yield curve into standard factors but this exercise is further complicated because of exceptional policy environment characterized by ultra-low interest rates and the form of exchange rate targeting.

While chapter 3 uses vector autoregression model, chapter 4 uses the Bayesian approach to vector autoregression. The choice to adopt Bayesian approach is dictated by the relatively short time series that a researcher encounters when analyzing the data from Central Europe.

In conclusion, I applaud that the doctoral student has been able to publish a paper in a decent journal with impact factor by himself showing that he has grown in an experienced researcher. I am also happy to see the high-quality policy-oriented paper in the local journal with impact factor. Most importantly, I also appreciate that the student also focused on a long-term research projects and one chapter of his thesis targeted to high-ranked journal. Adam's research significantly extends our knowledge in the area of yield curve modelling.

Overall, this is a great doctoral thesis and I have no doubts that it is defensible at our institute.

Date:	21 st January 2021
Opponent's Signature:	
Opponent's Affiliation:	Prof. Roman Horváth Ph.D. IES