Opponent's Report on Dissertation Thesis

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

Author:	**PhDr. Tomáš Adam**
Advisor:	Prof. Luboš Komárek
Title of the Thesis:	Four Essays on Applied Bayesian Econometrics
Type of Defense:	**DEFENSE**
Date of Pre-Defense	April 23, 2019
Opponent:	Risto Herrala

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.)

General
The thesis consists of four essays in which the author(s) study macroeconomic and macrofinancial topics based mainly on Bayesian econometric techniques. The fists essay assesses external demand of the Czech economy; the second Euro area bond yields; the third is about the impact of financial stress on exchange rates in CEE; and the fourth on volatility of banking stocks in various advanced economies. The first three essays are co-authored. The thesis furthermore includes an abstract which motivates the thesis as illustrating how Bayesian methods can be employed in standard areas of economic research.

Can you recognize an original contribution of the author?
The thesis clearly demonstrates the original contribution of the author to the various fields of study.

The main contribution of the first essay is empirical: the essay develops a now-casting model which allows the extraction of useful signals about the state of the economy based on diverse data sources. The main contribution of the second essay is also empirical: it informs about the role of extemal (US and emerging economy related) factors on Euro Area bond yields. The third essay makes both a theoretical and an empirical contribution: it presents a stylized theoretical model on how changes in investor attitudes towards risk influence exchange rates, and then uses the insight from the theory to shed light on the drivers of exchange rate developments of CEE countries. The main contribution of the fourth essay is empirical, as it adds to our understanding about how country-specific and global events impact the volatility of banking sector stock prices in the selected countries, and how this effect varies across countries.

I would also like to point out that apart from the purely academic contributions, the four essays also demonstrate impressively the ability of the author(s) to contribute through their research to economic policy in a useful way. The now-casting model developed in the first essay could be useful for the Czech central bank as it analyzes the state of the Czech economy to motivate its monetary policy stance. Similar models are widely used and highly appreciated also by many other central banks. The model developed in the second essay would serve well as a tool for the European Central Bank to analyze and understand developments at the Euro Area bond markets. Indeed, models of this type are very much in demand as part of bond market analysis also in commercial banks. The empirical approach developed in the third essay could similarly aid the associated central banks and other market participants in understanding developments at their FX markets. The analysis in the fourth essay could help authorities dealing with financial stability issues to assess the implications of financial instability.

Is the thesis based on relevant references?
Yes. The author(s) clearly show their excellent understanding of the literature, and proper citation technique.

Is the thesis defendable at your home institution or another respected institution where you gave lectures?
The thesis would in my view clearly be defendable at my home institution as well as the institution where I have lectured on similar topics.

The thesis demonstrates a high level of academic skill, commendable versatility in the use of advanced empirical methods in the selected areas of academic research, awareness of the related policy issues, excellent ability to present the results of one's research. The fact that many of the papers are co-authored is furthermore a welcome sign that the author has the ability to network and constructively co-operate with other researchers for the benefit of the academic community.

To elaborate on these themes, the formalism used in the essays is economical and, in the main, well presented thereby greatly benefiting the reader. The author(s) demonstrate impressively their ability to apply advanced empirical techniques to further their research agenda. In the first essay, the authors employ Bridge models, which have been widely employed in related research by various authors. The technique is used in the essays both in the univariate and the multivariate case, and the authors furthermore employ the common components' approach. In the second essay, the authors employ the Factor-Augmented VAR with time-varying loadings. This approach is widely used in time series applications such as the present one where not all controls may be known and/or their number is large.

In the third essay, the authors employ simulation techniques to demonstrate the outcome of the model under different assumptions about the underlying parameters. In the empirical part, they employ Bayesian Markow-switching VAR techniques. The Bayesian approach is, again, well-motivated due to integrate the priors from the theoretical model. The fourth essay relies on rolling regression, multivariate generalized autoregressive conditional heteroscedasticity

(M-Garch), and a state-space model, which are well motivated by considerations about the variation of parameters of interest in time.

Do the results of the thesis allow their publication in a respected economic journal?
The four essays are well suited for publication in academic journals, in particular journals that focus on empirical finance.

The research questions are clearly stated, the research methods are well motivated and correctly used, the results are (in the main) interesting, and the academic contribution is properly placed in the context of previous research. The writing style is clear and well-structured for an academic publication. The tables and charts are well motivated and utilized appropriately to demonstrate the results.

Are there any additional major comments on what should be improved?
The author had sufficiently taken into account the comments of the pre-defence referees. I do not see any need to further improve the thesis for the purposes of the doctoral defence.

What is your overall assessment of the thesis?
I recommend the thesis for defense without substantial changes,

Date:	
Opponent's Signature:	
Opponent's Affiliation:	