Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Asset prices and macroeconomics: towards a unified macro-finance framework
Type of Defense:	**DEFENSE**
Date of Pre-Defense	March 4, 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 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.)

The dissertation thesis of Ales Marsal represents a collection of articles dealing with dynamic stochastic general equilibrium models (DSGE) applied to evaluate various finance-oriented issues. Before the financial crisis, the DSGE models have largely been oriented towards macroeconomic phenomena without explicit modeling of the financial sector and this has largely been enough to understand the dynamics of main macroeconomic features such as economic activity or inflation. The finance modeling literature has lived largely independently from DSGE macroeconomic models. I will largely repeat my comments from the pre-defense stage because they remain valid and because the thesis did not have to be revised extensively.

However, the financial crisis has shown us that we need to understand the dynamics of macroeconomic and financial sectors jointly. This poses various modeling challenges because modeling the financial part is inherently complex. The financial sector is often characterized by various networks, non-linearities or speedy (over) reactions to the news. At the same time, the financial sector is complex, and we lack a simple, summarizing measure of financial sector behavior (while we may have the summarizing measure for the macroeconomic sector – gross domestic product and inflation rate). The complexity of the financial sector makes macro-finance modeling an exciting endeavor.

The submitted dissertation thesis features the models that are at the intersection of macroeconomics and finance. The articles in the thesis are accompanied by the introduction, providing an overview of main issues as well as summarizing the contribution of the author. The thesis consists of four chapters. The first chapter provides a summary, while the other three chapters represent a genuine contribution to the literature. It can be said that the dissertation focuses on the issues of bond pricing and government expenditures.

The second chapter focuses on the consequences of trend inflation for the term structure of interest rates. The chapter extends an authoritative macro-finance model of Rudebusch and Swanson (2012, published in the American Economic Journal: Macroeconomics) by incorporating trend inflation into the model. This extension is motivated by the empirical literature suggesting that the low-frequency movements in the inflation rate (i.e., trend inflation) is a crucial factor explaining the term structure of interest rates. The chapter is co-authored by Katrin Rabitsch and Lorant Kaszab and it is currently submitted to the journal.

The third chapter examines the consequences of government spending on the term structure of interest rates. The novelty is that the chapter examines the different types of government spending: wasteful, productive and utility enhancing. It also examines spending reversals. The asset pricing implications are studied using a novel modeling framework – an attribution analysis is used to evaluate to quantify the contribution of each factor (the pricing kernel decomposed into four macroeconomic factors) to bond prices.

The last chapter focuses on the determinants of the magnitude of fiscal multipliers. It uses the standard new Keynesian DSGE model but extends it along several dimensions. The model focuses on examining the size of fiscal multipliers during two regimes. The first regime is characterized by the "good times" and here the consensus in the literature is that fiscal multipliers are unlikely to be large. To the contrary, in the case of "bad times", of which zero lower bound environment (this means that the monetary policy rates are zero) is a main characteristic feature, many researchers believe that fiscal policy might be helpful in combating the crisis. In other words, the magnitude of fiscal multipliers is significantly above one (i.e. one dollar spent by the government will multiply itself and increase the measure of economic activity by more than one dollar).

However, this chapter shows that the magnitude of fiscal multipliers is unlikely to be above one even in the crisis times with the zero lower bound. The chapter shows that this is mainly because of the flattening of the Phillips curve linked to the strategic complementarity in price setting formation processes. The chapter also examines several other scenarios such as the different steady states in government spending, etc. The theoretical model is calibrated to the US data and also explores different model solutions (linear vs. nonlinear).

The chapter has been published in the *Journal of Macroeconomics* in 2020. This is a well-established, highly selective field journal, which publishes research on a wide array of macroeconomic issues. The chapter has been co-authored by Lorant Kaszab (Central Bank of Hungary), Katrin Rabitsch (Vienna University of Economics and Business) and me. I confirm that Ales Marsal has contributed to the chapter significantly and I consider his contribution as major.

The high quality of this dissertation can be recognized not only from the actual reading of the thesis. As already noted above, one of the chapters in the dissertation has already been published in a decent journal – *Journal of Macroeconomics*. The other chapters are available as the

working papers at the Slovak central bank or the Vienna University of Economics and Business. The chapters have been presented at selective conferences, including at the conference of the Society for Economic Dynamics, which is considered as one of the best conferences in macroeconomics and many important papers are presented at this conference. Some typos appear in the thesis but not many.

In addition, I would like to note that Ales Marsal co-authored additional two papers on macro-finance issues, which were published in the journals with impact factor – in the *Czech Journal of Economics and Finance* and in the *Economic Modelling*. There is another paper co-authored by Ales Marsal on the effect of fiscal policy on the nominal term premium. The paper is currently at the 4th revise-resubmit at the *Journal of Money, Credit and Banking*.

All in all, I find the dissertation to be a highly valuable piece of research contributing to macro-finance modeling. The research is predominantly theoretical and firmly guided by empirical regularities and current policy challenges. The two chapters are not published yet and I expect them to be published in a highly selective field or top field journals. I fully recommend the doctoral thesis of Ales Marsal to be defended.

Date:	14th April 2020
Advisor's Signature:	
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