

Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Essays on Macro Imbalances, Monetary Policy and Exchange Rates
Type of Defense:	DEFENSE
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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.)

I already recommended the dissertation of Jan Hajek for the pre-defense without substantial changes. In the current version of the thesis, Jan Hajek reacted to the comments by three opponents and included an Appendix with the detailed response to the individual comments. Therefore, it is not surprising that I will repeat my lines from my pre-defense report.

The dissertation of Jan Hájek is a collection of four interrelated chapters on empirical macroeconomic modelling in open economies. These four chapters are accompanied with an introduction stating the main issues covered in the dissertation and placing the following chapters in a broader picture.

The characteristic feature of this dissertation is a careful empirical approach to examine some of main monetary/macroeconomic policy issues in Europe and especially in Central Europe. An important observation that this dissertation makes is that domestic monetary policy is not set in vacuum, i.e. global (or foreign) factors can play a decisive role for monetary policy setting. If the global factors are harmonized with a domestic economic environment, then the factors do not need to generate tensions for domestic monetary policy. However, following the global financial crisis, business cycle synchronization seems to become weaker, as small open economies in Central Europe started exhibiting a strong economic growth to be accompanied with necessary interest rates hikes, while the euro area economies have been characterized by

subdued economic activity, interest rates around zero and even accompanied by unconventional monetary policy measures further loosening monetary policy stance.

Next, the dissertation touches upon another crucial policy issue of international monetary policy spillovers, which has been highlighted by John Taylor in his policy-oriented speeches. Suppose a major central bank loosens its policy to safeguard price stability following some negative shock. If the international monetary policy spillovers are strong, then other central banks are more likely to loosen their monetary policy stance, too. A vicious circle of monetary policy loosening may eventually emerge. There are two chapters in this dissertation that specifically address this issue and quantify the importance of international monetary policy spillovers.

Importantly, the dissertation also examines the extent of exchange rate pass-through. This is a traditional task for central bank-oriented research because timely estimates of exchange rate pass-through are crucial (especially in small open economies such as the Czech Republic) to understand the role of exchange rate for domestic prices. Several arguments have been raised that the exchange rate pass-through could have weakened in recent years but still exchange rate fluctuations are dominant source of monetary policy setting and inflation evolution in small open economies. In this regard, researchers often overlook how surprisingly similar inflation targeting and exchange rate targeting can become in highly open economies. Inflation targeting focuses on targeting the price stability both in tradable and non-tradable sector (note that price stability is often defined as 2% year-on-year inflation rate). On the other hand, exchange rate targeting essentially focuses on targeting inflation solely in tradable sector (fixed exchange rate is set at the level to import low inflation from abroad). In highly open economies, non-tradable sector is small and exchange rate targeting and inflation targeting may exhibit similar features.

The choice of empirical approaches is standard and largely follows the state-of-the-art literature. For example, two chapters on monetary policy spillovers use the global vector autoregression model developed by Hashem Pesaran and his co-authors that has been specifically designed to analyze multi-country macroeconomic interactions.

Talking specifically about individual chapters, the second chapter (note that the first chapter is a general introduction) introduces a panel data model to examine the exchange rate misalignment, i.e. to what extent the actual value of exchange rate does not correspond to the fundamental value. The fundamental value is determined by macroeconomic variables. The euro area is characterized – in some sense – by the fixed exchange rate regime and macroeconomic fundamentals should be synchronized across individual euro area members so that one currency (euro) fits all. The exchange rate misalignment in the euro area has been increasing in the run-up to global financial crisis and stagnated later on.

More specifically, the estimates in this chapter show that the euro has been overvalued from the perspective of Southern European countries, while the euro has been undervalued for countries north of Alps. Overall, this solo-authored chapter is a well-executed piece of monetary policy research, which could be published in an impacted journal (so far, the chapter is available as the working paper at our institute).

The third chapter examines how the euro area shocks affect the macroeconomic environment in Central and South Eastern European countries. The chapter employs global vector autoregression to study these macroeconomic spillovers. The focus of this chapter is on investigating the four policy relevant shocks and how output and prices Central and South Eastern European countries react to it. The shocks are: increase in the euro area interest rate;

increase in the euro area industrial production; decrease in the euro area consumer prices and decrease in global oil prices. The results show that Central Europe is typically affected by the euro area shocks more strongly than the South Eastern Europe. In fact, the reaction of Central Europe economies to aggregate euro area shocks is as strong as the reaction of individual euro area countries. This result suggests very strong economic integration of Central European economies vis-à-vis its Western European counterparts.

Note that examining the transmission of euro area consumer prices into prices of Central and South Eastern European countries especially important in the light of discussions regarding the optimal inflation target. Suppose that the inflation target in the euro area is increased to 4% (I call it inflation target for simplicity and I am aware of discussions whether the European Central Bank is, or is not, an inflation targeter) and Czech National Bank decides to stick to their 2% target. What would be the likely consequences of these policy choices? The global vector autoregression model estimated in this chapter may shed light on these issues providing an estimate of how tightly the prices in Central and South Eastern European countries are linked to the euro area prices. The chapter is co-authored (as the following chapters). Jan contributed dominantly to all of these chapters; he has been fully in charge of the model estimation and data collection and cooperated in writing the text. The chapter has been published in *Open Economies Review*. This is a respected field journal with impact factor, which regularly publishes policy-oriented research from many leading scholars in the field. According to Google Scholar, the article based on this chapter has been cited 17 times including in the well-established journals such as *Journal of International Money and Finance*, *Journal of Policy Modelling*, *Open Economies Review* or *Applied Economics*.

The fourth chapter extends the previous chapter because it takes unconventional monetary policy on board. While the previous chapter abstracted from potential unconventional monetary policy effects, the fourth chapter reformulates the issue of international spillovers of monetary policy to the international spillovers of monetary policy stance. To do so, the chapter employs various shadow policy rates. These are the monetary policy rates adjusted for unconventional measures and therefore, not restricted by the zero-lower bound. The chapter examines not only the propagation of euro area shocks but also shocks stemming from the US. The set of countries includes not only Central and Eastern Europe but also the Western European countries in the European Union without euro. Among many other things, the results show how the euro area shocks are dominant, as compared to the US shocks. The chapter has been published in *Economic Systems* in 2018. *Economic Systems* is a well-established journal with impact factor published by the Leibniz Institute for East and Southeast European Studies in Regensburg. The paper based on this chapter received several citations recently including the one in *Journal of Banking and Finance*. The paper has been also cited at the high-level conference organized by the European Central Bank by one of the officials representing the Bank for International Settlements.

The fifth chapter focuses on the estimation of exchange rate pass-through in the Czech Republic. It employs vector autoregression model and estimates how exchange rate propagates into different price indexes. The average pass-through is estimated at 20%, i.e. not far from previous findings. There is some heterogeneity in terms of the extent of exchange rate passthrough into different price indexes, with food prices reacting most strongly to exchange rate shocks. The chapter has been published in the *Emerging Markets Finance and Trade*, a journal with impact factor focusing on emerging market economies.

Overall, I consider the dissertation a fine piece of empirical research oriented on monetary policy issues. Jan has showed ability to conduct research at the international level, to understand deeply the main concepts in monetary policy and to combine them wisely into sound policy prescriptions. The chapters in this dissertation – despite being published only recently – has been already noted by the international research community and as of time of the writing of this report, they generated 33 citations in Google Scholar.

I recommend the thesis for defense.

Date:	20 th July 2019
Opponent's Signature:	
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