Referee Report Róbert Ambrisko

The dissertation of Robert Ambrisko consists of three chapters and is entitled “Essays on Fiscal Policy and Productivity Growth”. Altogether the dissertation is very rich and tackles this issue from various directions and with different methodologies. The author masters both structural DSGE-models and as well as econometric state of the art methods. He draws conclusions from it and applies them to state-of-the art research as well as current fiscal policy topics. In the following I will address each chapter separately and offer feedback as well as ask some clarifying questions.

The first chapter examines in a state-of-the-art DSGE-model the Balassa-Samuelson effect and the resulting perspectives in the convergence of the Czech Republic to the Euro Area. The chapter finds that the inflation pressures that would additionally result are subdued after the adoption of the single currency. Also, the existence of the Balassa-Samuelson effect would not lead to a violation of the limits imposed by the ERM II mechanism.

- In the introduction it does not become very clear what sets your study apart from Ravenna and Natalucci (2008). Why do you get different results, when the model is more or less the same. You write a bit more in the later part of the paper, but it would be already important to know in the introduction where the differences in the two papers lie. What drives the different results, what model ingredients are responsible for it?
- I would encourage the author to add a few sentences on the need to include a non-stationary technology process and how to handle it while estimating the model. Is it made stationary by dividing by it later on? It must be stationary as you write later on in the text that the feedback parameter to foreign debt ensures the stationary of the model. On the other hand the impulse responses you present don’t look stationary: is it a permanent shock on technology? Why?
- The news shocks are introduced abruptly without any explanation why they are needed and what the overall role of them is. Also later on in the text they are not really mentioned. I suspect they are needed for the simulations when the adoption of the single currency is examined. As this comes as a surprise to the agents, those news shocks are important. I would suggest to be more precise at this point and to explain in greater detail how the simulations are carried out and what the role of the news shocks is. Simultaneously, in terms of expectations it would be beneficial to know for example in Figure 1.6 when you look at the transition to a fixed exchange rate who knows what, when, and what the agents expect. Put differently, is it perfect foresight and agents know everything in advance which would also be fine, but I would urge the author to state it.

In the second chapter fiscal multipliers for the Czech economy are looked at. Once again the author uses a medium-sized DSGE-model and estimates it on a large variety of time series. The resulting multipliers are in line with what other studies have found in this literature. The ensuing mix of measures to derive growth-friendly strategies is revenue-based for times of consolidation. Fiscal devaluation has the potential to stimulate the GDP.

- The very first sentence of the introduction is highly misleading. As the second chapter of the thesis is not about monetary-fiscal interaction and active vs. passive policy etc. the reader is right at the beginning sent on the wrong track. Although a sentence which is correct of course, it is misplaced and I would try to find another opening sentence which motivates the whole chapter better.
- The very question of the whole chapter is how growth-friendly various fiscal instruments are: in my eyes this objective can only be determined at the short or (at the most) medium term with the methodology at hand. DSGE-models are a great tool but are primarily useful for short-run analysis. Longer-run objectives are just not modelled inside those model class. An increase in public investment to increase human capital down the line will show up in twenty to thirty years but is enormously growth friendly in the long run but the resources may seem wasted in the short run (this is why many politicians refrain from employing fund for this). I would make clear (perhaps in a footnote) that the term growth friendly extends not to the long run, which is more than fine as your objective is the stabilization of the business cycle or how well/badly fiscal consolidation plays out.
- When it comes to the model results, those stem from an estimated linearized model, so they should be treated with caution. At least in a footnote it would be worthwhile stating, that multipliers are contingent on non-linearities such as high or low interest rates (ZLB for example), business cycle conditions, the overall magnitude of debt position etc. Of course no model can incorporate all of those states but it would be beneficial to state what ingredients might change the multiplier analysis. Leeper et al. (2017, AER) make a nice case what model aspects drive the multiplier.

Finally, the third chapter looks at fiscal discretion in the Czech Republic in the last two decades. There seems to be no clear link between business cycle and fiscal discretion which indicates a lack of stabilization through fiscal policy. The counterfactual exercise makes clear that real GDP might have grown faster by roughly 1.8 percentage points over the last 15 years.

- The overall question is the business cycle stabilization of fiscal policy. This chapter is more policy related and despite the fact that the stabilization of the business cycle is a central objective to policy, it is not the only one. Fiscal policymakers may have to balance the stabilization issue with allocation and distribution. At some point a very heterogeneous society or uneven in the wealth or income distribution may face different fiscal decision than otherwise needed. So with this in mind, I would suggest to add a sentence to make clear, that along the lines of Musgrave (1953) you look only at one of the objectives of fiscal policy and neglecting the other two.
- In the bottom-up approach past discretionary fiscal measures are collected. Is this the same approach as the narrative approach in the VAR-literature? If not, what is the difference to this approach?
- The budgetary sensitivity parameter seems to be well-anchored and not overstated with a value of 0.3. As it appears to be important, however, I wonder how much it is driving the results and if there are robustness checks done with it. How would results

change if the value increases to 0.4 for example? Or is it so well-anchored in all policy related analysis that one can safely assume it to be this number.

- As you use vintage data from 2018 the approach taken is a more academic one: to assess in hindsight how fiscal policy was conducted and what impact it had. In order to assess how policymakers behaved, however, it would be important to use real time data to assess the kind of data and information they had at the time. Both approaches are fine, but it's important to realize that the objective of both are different and it would be nice to state that the one chosen is taken and why.

Altogether I think that all three chapters definitely qualify for a dissertation and also for publication. Nevertheless I raised some questions and suggestions which I would encourage the author to address not only for the sake of the dissertation but also for possible publication of the individual chapters later on. The overall majority of those suggestions should be easy to tackle by adding a clarifying footnote or inserting a few explaining sentences in the text. I also recommend of course that the author is admitted to a defense of this dissertation.