Summary

This paper provides a method to compute optimal interest rate rules in a dynamic general equilibrium model subject to a zero lower bound (ZLB) constraint. The contribution is methodological and, in my view, potentially significant.

The analysis is competently executed and the paper is generally well written. The paper needs a better collocation within the economic literature and to be more focused on its main contribution.

Comments

1.Introduction: when describing the two alternative approches to determining optimal rules under the ZLB, the main contributuons in both strand of the literature should be cited.

2.In the Introduction the approach taken in the paper should be related to the literature comparing Commitment (time inconsistent solution) versus discrection (time consistent solution) in economics. A good starting point to organize this discussion is Woodford (1999).

3.Section 2: please provide more details concerning the simple model you spell out at the beginning of the section (equations 2 and 3). Is it the baseline New keynesian model that you have in mind?

4.Section 2.2: you first say that the model summarized by equations 2 and 3 is calibrated, then that it is estimated using a prediction error method. Please clarify.

5.Matrix A describing the evolution of the system has an eigenvalue larger than one. It is not fully clear to me whether instability of the system is necessary to apply the MPC optimization. Specifically, the reformulation of the problem in the form specified in the objective described in (11) requires instability of the original problem?

6.You specify that minimizing (10) is equivalent to minimizing (11). Does this mean that the maximum level of welfare obtainable is independent of S and R in (11)?

7.Figure 2 is not very explicative. I would drop it and refeer to figures 3 and 4 in th analysis.

8.I do not find of great interest discussing which values of λ and R replicate the original coefficients of the interest rate rule chosen by Taylor. I would limit the discussion to the analysis of combinations of λ and R that lead to a unique stable equilibrium.

9.Section 3.3: In this section, you show that reformulating the MPC problem including a term which penalizes the rate of change of the interest rate results in a Taylor rule where inertia is optimal. Woodford (1999) points out that including a smoothing motive in the welfare loss function of the CB would lead to an interest rate rule characetrized by inertia. While this reverse-engineering exercise is interesting, including a term which penalizes interest rate changes in the MPC problem is not supported on welfare grounds. In other words, the welfare function you are maximizing would not be a correct second order approximation to the utility of the representative agent of the economy you are considering. For this reason I would remove section 3.3. In my view the aim of the paper should be that of providing a method to compute

optimal interest rate rules under a ZLB constraint. The optimality of inertial, which is subject to the above critique, can be neglected in this contribution.

10.Is the method proposed in the paper applicable to larger (medium-scale) models? A dicussion of this issue would be useful.

References

Woodford M. (1999), Optimal Monetary Policy inertia. unpublished manuscript available at the web page of the author.