Assignment

The assignment should be done in groups of two persons. It should be handed in to Christina Håkansson on 20 May at 5 pm at the latest. The assignment can give a maximum of 20 points out of a total of 100 points. Those who want to can instead choose to answer an extra question in the written exam. This question can also give a maximum of 20 points. In case someone both hands in an assignment and answers the extra question, the best result (on the assignment or the extra question) will be counted.

The US and Canada have a cyclically dependent unemployment insurance. This implies that unemployment benefits are made more generous in cyclical downturns than in upturns. In a recent paper Torben Andersen and Michael Svarer have analysed such a set-up. The model is, however, quite complex and difficult to see through. The assignment is to simplify the model and explain the intuition. You should do this by employing two simplifying assumptions:

(i)   Assume that all agents are myopic in the sense that they believe that the current state of the economy will prevail for all future. This implies that they believe that the current rate of separations (p in the model) will persist for all future.

(ii)   Assume also that the government can resort to borrowing and hence can finance unemployment benefits this way. As a consequence, the tax rate is constant. Both the income tax and the lump sum tax can without loss of generality be set to zero. The assumption of myopia means that no considerations regarding future taxes or benefits enter into the analysis.

You should provide answers to the following questions:

(a) Show how the optimisation problem of the social planner choosing the level of unemployment benefits is changed under the above assumptions. What condition must be met for the problem to have a meaningful interior solution?

(b) Explain how the envelope theorem is just when the optimisation problem is solved.

(c) Use the simplified model to show how the benefit level should vary between good and bad states (states with a low and a high p respectively).

(d) Explain the intuition of the results you have derived.

Reference
Andersen, T.M. and M. Svarer, Business Cycle Dependent Unemployment Insurance, CEPR Discussion Paper No. DP7334.