Macroeconomic Theory II: Exercise list 2

To be handed in by January 22, 2020

1) **RBC Model With Taxes**

Consider the model that is implemented in the Dynare file rbctax.mod.

a)   We want to calibrate labor supply to $L^* = 1/3$. Find the parameter *eta* such that this is the equilibrium. In the process, compute the steady state of all model variables.

b)   Write a matlab function that takes steady state labor L^* as argument, computes the steady state of all model variables, and returns the residual of the FOC for the labor/leisure choice.

Consider the parameter values $eta = 1.5$ and $eta = 1.0$. Plot the value of the residual for all the values $L = 0.1 : 0.001 : 0.999$ for both values of *eta*.

Explain what happens in the either case in the case $eta = 1.5$.

c)   Now change the model so that average government expenditures are defined relative to output:

```
g(0) = gbar*yStSt + rhog*(g(-1)-gbar*yStSt)+epsg;
```

where the parameter yStSt is set equal to the steady state value of output.

Repeat the analysis of 1b) for this case.

Compute the equilibrium L^* in the case $eta = 1.5$.

Do all the calculations in matlab files, and hand in the files electronically.