Model Description:

Leeper, Walker and Yang (2013) implement a new Keynesian model, similar to those in Smets and Wouters (2003, 2007), yet add distorting tax rates on capital and labor income. The model is used to assess the effect fiscal foresight entails to a naive econometrician who estimates impulse-response functions conditioning solely on the variables observed and disregards fiscal foresight.

* Aggregate demand: The model economy is populated by a continuum of infinitely lived households of which a fraction is non-Ricardian. Non-Ricardian households do not have access to any savings technology, thus they consume their entire disposable income every period. The firms and the capital stock are owned entirely by Ricardian households. The utility function is separable in consumption and leisure and assumes external habits that depend on aggregate consumption in the last period. Households provide uniquely differentiated labor in monopolistic competition. Ricardian households have also access to state-contingent claims to eliminate the income differentials due to differentiated labor.
* Aggregate supply: Production is carried out in two stages, by a perfectly competitive final good producer and a continuum of monopolistically competitive intermediate goods producers using capital and labour as input asfactors. Wages and prices are allowed to adjust only gradually by assuming Calvo pricing with partial adjustment of the contracts to past inflation.
* Government: Monetary authorities follow a Taylor-type rule. Fiscal authorities levy distortionary taxes on income from capital and labor and pay lump-sum transfers to households.
* Shocks: Total factor productivity shock, preference shock, investment adjustment costs shock, monetary policy shock, wage markup shock, price markup shock, government spending shock, capital tax rate shock, labour tax rate shock and government transfers shock .
* Calibration/Estimation: The model is estimated for the U.S. by means of Bayesian techniques for the period 1984:1–2007:4 using ten key macroeconomic variables: consumption, investment, labor, wage rate, the nominal interest rate, inflation, capital tax revenues, labor tax revenues, the sum of real government consumption and investment, and government transfers. Government data include all federal, state, and local levels.
* Replication: Unfortunately there were no impulse response functions to be replicated. Therefore, the original NK-model was separated from the code and translated to Dynare. The impulse response functions of output and the interest rate were replicated and compared also with the implemented version of the model. The IRFs in the model base seemed to match those from the original Matlab code which were calculated manually.