Notes on implementation

Karol Bednarski

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1 Introduction

The model is an implementation of the theory provided in the Project Liquidity and Risk file. FOC conditions were derived and simplified. First-order approximation has been applied. The subscript of R^T_{t-1} has been changed in the following equation to solve the model using Blanchard-Khan:

$$c_t + \mathbf{1}^\intercal \boldsymbol{b}_t = y + \boldsymbol{R}_t^\intercal \boldsymbol{b}_t - T_t$$

There are two files:

- gen_model - the new file, the same asset can be divided into different clusters
- gen_model_old - an asset can be placed only in one cluster.

  A new kind of shock has been added - so called 'monetary policy shock'. It increases the quantity of one asset, decreasing the quantity of another one at the same time. The equation is given by:

  $$\omega^{MP}_{p,t} = \rho_{MP}\omega^{MP}_{p,t-1} + \sigma_{MP}\epsilon^{MP}_{p,t}, \quad \epsilon^{MP}_{p,t} \sim \mathcal{N}(0,1)$$

  Asset supply has been rewritten:

  $$b^G_{i,t} = \bar{b}^G_i + \phi_i \omega^G_{i,t} + \omega^{MP}_{p,t}$$