ReadMe for Model Part of "Debt Maturity Heterogeneity and Investment Responses to Monetary Policy" by Minjie Deng and Min Fang

1_Decision_rules

This folder contains codes that solve and calibrate the model, save decision rules, and plot for the decision rules.

- *main.py* assigns parameters and runs *bench_decision.py* and *bench_simulation.py* sequentially.
- *bench_decision.py* solves the model and saves the decision rules into the folder.
- *bench_simulation.py* simulates the model using the decision rules and calculates the model moments.
- *plot_bondprice.ipynb* generates Figure 4 and Figure 5.
- *plot_decisionrules_nextk.ipynb* generates Figure 6 and Figure 10.
- *plot_decisionrules_nextB.ipynb* generates Figure 7.
- *plot_decisionrules_defaultrisk.ipynb* generates Figure 8.
- *plot_decisionrules_nextf_Appendix.ipynb* generates Figure 15 in Online Appendix D.1.

2_Only_short_term_debt_model

This folder contains codes that solve and simulate for the reference model (only-short-term-debt model).

- *main.py* assigns parameters and runs *bench_decision.py* and *bench_simulation.py* sequentially.
- *bench_decision.py* solves the reference model and saves the decision rules into the folder.
- *bench_simulation.py* simulates the reference model using the decision rules and calculates the model moments.
- *plot_decisionrules_nextB.ipynb* under subfolder *plot compare* generates Figure 9. Note that here to run *plot_decisionrules_nextB.ipynb*, one needs to rename the decision rules for the reference model as *_short, and then copy the decision rules for the benchmark model from 1_Decision_rules into the same folder *plot compare*.

3_IRF

This folder contains codes that shock the model with an expansionary monetary policy shock and then plot the impulse responses.

- *Shockr.py* simulates the model when there is an expansionary monetary policy shock. Note that one needs to copy the decision rules generated from running *main.py* in the 1_Decision_rules folder.
- *plot_IRF_rshock.py* generates Figure 11.

4_Regression

This folder contains codes that generate model-simulated data and run regression analysis using model-simulated data.

- *regression.py* simulates the model and saves data into the folder for regression.
- *00.Do-file-regression.do* reshapes the saved data and runs regression that generates Table 10.
- *01.Do-file-inv_dynamics.do* conducts local projection and generates Figure 12.