Replication files for:
"Monetary Policy Under Natural Disaster Shocks" published in International Economic Review 2024.*

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1 Empirical Analysis

1.1 Replicate Figure 1

The data used comes from IMF International Financial Statistics. The two subgraphs are constructed by plotting the change in the annual GDP growth rate for each respective year, using 2000 and 1973 as the base years, for Belize and the United States respectively.

1.2 Replicate Figure 2

Figure 2 can be replicated in STATA using the following steps:

1. Open file "data box plots.dta"

2. Run "graph box d_gt if dam5==1, marker(1, msize(vsmall)) marker(2, msize(vsmall)) ylabel(, labsize(vsmall) angle(horizontal)) title(Change in Real GDP growth(percent), size(vsmall)) subtitle(, size(tiny)) legend(size(vsmall)) noout note("")", to replicate subfigure 2.a.

3. Run "graph box d_cpi_infl if dam5==1, marker(1, msize(vsmall)) marker(2, msize(vsmall)) ylabel(, labsize(vsmall) angle(horizontal)) title(Change in CPI Inflation(percent), size(vsmall)) subtitle(, size(tiny)) legend(size(vsmall)) noout note("")", to replicate subfigure 2.b.

4. Run "graph box d_money_gr if dam5==1, marker(1, msize(vsmall)) marker(2, msize(vsmall)) ylabel(, labsize(vsmall) angle(horizontal)) title(Change in Real money growth(percent), size(vsmall)) subtitle(, size(tiny)) legend(size(vsmall)) noout note("")", to replicate subfigure 2.c.

1.3 Replicate Figure 3

The numbers necessary to plot the various subplots of Figure 3 are provided in spreadsheet "NARRATIVE ANALYSIS FIN.xlsx", which also contains calculations consistent with the detailed information provided in the Appendix.

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2   Model Results

Replication codes for model results are in three subfolders. "Model baseline" contains the codes for the baseline model, "Model_domestic_inflation" refers to the version of the model where the Taylor rule responds to domestic inflation, "Model_nonstationary_labor" refers to the version in which labor supply in nonstationary.

2.1   The toolbox

All results of the paper are obtained by solving the model with Taylor projection, a solution method developed by Levintal (2018) and used by Fernandez-Villaverde and Levintal (2018) to solve DSGE models with rare disasters.

For all the details about the solution method please refer to the paper and the online appendix of Fernandez-Villaverde and Levintal (2018).

For all the preliminay steps and the instructuons to run the toolbox in Matlab please see the file "User Guide.pdf" and Oren Levintal's website (https://sites.google.com/site/orenlevintal/taylor-projection).

2.2   Model baseline

- Open folder "Model_baseline".

- In this folder, there are separate matlab codes to replicate all the figures and tables obtained with the baseline version of the model.

- To replicate Figure j, run the file *Replicate_ Figure_ j.m*, with $j = 4, 5, 6, 7, C.2$.

- To replicate Table i, run the file *Replicate_ Table_ i.m*, with $i = 2, 3, C.1, C.3, C.4$.

2.3   Model with domestic inflation targeting

- To replicate Figure C.1:

  - Run and save the simulations under CPI inflation targeting. To do so, go to folder "Model_baseline" and replicate Figure 4. Then copy the MAT-file into the folder "Model_domestic_inflation".
  - Open folder "Model_domestic_inflation".
  - Run the file *Replicate_ Figure_ C.1.m*.

- To replicate Table C.2, run the file *Replicate_ Table_ C.2.m*.

2.4   Model with nonstationary labor

- Open folder "Model_nonstationary_labor".

- To replicate Figure 8, run the file *Replicate_ Figure_ 8.m*.

- To replicate Table 4, run the file *Replicate_ Table_ 4.m*.

References

Fernandez-Villaverde, J. and Levintal, O. (2018). Solution methods for models with rare disasters. *Quantitative Economics*, 9(2):903–944.

Levintal, O. (2018). Taylor projection: A new solution method for dynamic general equilibrium models. *International Economic Review*, 59(3):1345–1373.