

READ ME FILE

Title: Sign Restrictions and Supply-demand Decompositions of Inflation

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Description

This 'read me' file contains instructions about how to replicate the results in RDP 2024-05.

Data

The data underlying the empirical exercise are in the 'Data' subfolder and were obtained from:

- The data used in the aggregate decomposition (Section 4.1) were obtained from the Federal Reserve Bank of St. Louis Federal Reserve Economic Database (FRED). Real GDP is contained in GDPC1.xls and the GDP implicit price deflator is contained in GDPDEF.xls.
- The data used in the disaggregated decompositions (Section 4.2) were obtained from the Bureau of Economic Analysis National Income and Product Accounts (NIPA) Underlying Detail Tables.
 - 'T_2_4_3U.xlsx' contains Table 2.4.3U. Real Personal Consumption Expenditures by Type of Product, Quantity Indexes.
 - 'T_2_4_4U.xlsx' contains Table 2.4.4U. Price Indices for Personal Consumption Expenditures by Type of Product.
 - 'T_2_4_5U.xlsx' contains Table 2.4.5U. Personal Consumption Expenditures by Type of Product.
 - SelectionDummies.xlsx identifies which expenditure categories should be included in the disaggregated analysis. Inclusion dummies were derived from the replication files to Shapiro (2022), which I downloaded from Adam Shapiro's personal website.

Data used to plot the figures can be found in 'rdp-2024-05-graph-data.xlsx'.

Programs

The results presented in the paper were obtained using Matlab R2021b on a desktop computer running Microsoft Windows 10 Enterprise with an Intel Core i7-9700 CPU @ 3.00GHz, 8 Cores and 64 GB RAM. The Matlab code used to generate the results in the body of the paper does not require the installation of any additional toolboxes. The code used to generate Figure A1 requires the Statistics and Machine Learning Toolbox.¹

To replicate the results, run runAll.m. Matlab versions of the figures are saved to the 'Figures' subfolder and results are saved in .mat files in the 'Results' folder (both are empty in the replication package).

Reference

Shapiro AH (2022), 'Decomposing Supply and Demand Driven Inflation', Federal Reserve Bank of San Francisco Working Paper 2022-18, rev February 2024.

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1 Researchers without access to the Statistics and Machine Learning Toolbox could run the code after writing their own functions to draw random variables from the inverse Wishart distribution (replacing Matlab's iwishrnd function) and to compute quantiles (replacing Matlab's quantile function); this would require modifying aggregate_inference.m.