Overview and instructions

The code in this replication package generates all figures and tables presented in "New Pricing Models, Same Old Phillips Curves?" using Python.

Two main files generate all the necessary output. The file *plot_paper.py* generates all tables and figures except for figures 13 and F1. It runs for approximately 70 minutes on a Windows 10 laptop with processor Intel(R) Core(TM) i7-7700HQ. The file *plot_paper_empirical.py* generates the remaining figures and runs for a few seconds on the same computer.

To generate all figures and tables, simply run the *plot_paper.py* and *plot_paper_empirical.py* programs. The file *plot_paper.py* is partitioned into many parts that can be run independently unless otherwise stated.

All figures and tables are saved in their respective folders, numbered as on the paper. Please make sure that there exist two folders named "figures" and "tables" in the directory.

Data

The only data used in the paper is the empirical price change distribution in Figure 13a, contained in the file *empirical_distribution.csv*. It was originally used in Bonomo, Carvalho, Kryvtsov, Ribon, and Rigato (2023) and shared with us by the authors.

Computational requirements

The original codes were run on Python 3.7.3 using the following packages:

- pandas 1.3.5
- matplotlib 3.5.0
- numpy 1.19.2
- scipy 1.6.2
- statsmodels 0.12.2
- xlswriter 1.3.7

Description of codes

- The file *menu_cost.py* contains the necessary functions for solving the basic menu cost model from the paper, as well as approximating the pass-through and GPC matrices.
- The file *time_dependent.py* contains the necessary functions for solving the time-dependent models employed in the paper.
- The file *plot_paper.py* is the main replication file and generates all figures and tables in the paper, except for figures 13 and F1.
- The file *plot_paper_empirical.py* generates figures 13 and F1.
- The file *multi_product.py* contains the necessary functions for solving menu cost models with 2-product firms.
- The file *general_equilibrium.py* contains the necessary functions to solve a standard New Keynesian model with menu cost pricing.
- The file *smets_wouters.py* contains the necessary functions to solve a Smets-Wouters model with menu cost pricing.
- The file *general_equilibrium_full.py* solves a standard New Keynesian model with menu costs when firms face large idiosyncratic shocks, as opposed to the limit when the standard deviation of these shocks goes to zero.
- The files *asymptotic.py*, *determinacy.py, jacobian.py, nonlinear.py, simple_block.py,* and *solved_block.py* are part of the toolbox for solving heterogeneous-agent models explained in Auclert, Bardóczy, Rognlie, and Straub (2021).
- The file *utils.py* contains auxiliary functions that are occasionally called by the above files.
- The file *plot_specs.py* contains the plotting options that make the generated figures exactly as in the paper.
- The file *empirical_distribution.csv* contains the empirical price change distribution from Bonomo, Carvalho, Kryvtsov, Ribon, and Rigato (2023), as explained above.