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README

Data and Code for:

Firms' Pass-Through Dynamics: A Survey Approach

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**Data access:**

This replication package cannot be used for any non-academic purposes and can only be reproduced by being physically present in Munich. The code and complete data (including confidential data) for this project is available in the Repository of the LMU-ifo Economics & Business Data Center (EBDC) archive (DOI: https://doi.org/10.7805/hsmc-h261). Access to the data is only possible with a physical presence at the EBDC and after approval of a standard data access application request (the form is available at the landing page of the EBDC archive: https://doi.org/10.7805/hsmc-h261). Please request the replication package of our paper in this application form.

The Harvard Dataverse Repository contains all code for this project and the data for this project which is not confidential.

**Replication instructions:**

The empirical programs run in Stata (version 17.0).

The quantitative model programs run in Matlab(version R2020b).

Most of the analysis was done on the EBDC's server using the following computing environment:

"Windows Server 2019", Intel(R) Xeon(R) CPU E5-2697 v4 @ 2.30GHz, 24 cores, 128 GB RAM.

The main data sources of the paper are the ifo surveys (DOI: https://doi.org/10.7805/hsmc-h261): the ifo Business Survey and the ifo Management Survey at the firm level. Note that the data of the ifo surveys are proprietary and must not be made publicly available. Thus, we are only allowed to make the data available through

the EBDC archive and not via an external repository, e.g., hosted by the Harvard Dataverse.

For the sake of convenience, we also transferred all additional datasets from other sources and the respective codes to prepare this data for usage to the aforementioned EBDC archive. Hence, all results of the paper can be replicated within the replication package at EBDC archive in a single setting (DOI: https://doi.org/10.7805/hsmc-h261).

Outside of the EBDC, only Figures A.1 and B.1 can be replicated and we created separate programs (6_ppi_cpi_plot.do and 5_graphs_literature.do) for this in the public Harvard Dataverse.

Executing the Stata master file (2_Code folder) and Matlab master file (4_Model folder) reproduce all Figures and Tables in the main text and the appendix automatically.

**Overview of data sources (all datasets contained in the EBDC replication package):**

| Data | Availability and Source |
|---|---|
| **Ifo Institute's Business Survey**<br>"IBS_Firm_level_long.dta" (raw data)<br>"time_kt_all.dta" (additional data on time spent)<br>"data_pt.dta" (prepared data) | EBDC archive (DOI: https://doi.org/10.7805/hsmc-h261) |
| **Ifo Institute's Management Survey**<br>"2023_12_11_ifoManagementSurvey.dta" (raw data)<br>"2023_03_09_ifoManagementUmfrage_Paneldaten.xlsx" (background information on firms in the survey)<br>"cleaned_data.dta" (prepared data) | EBDC archive (DOI: https://doi.org/10.7805/hsmc-h261) |
| **Model estimation output**<br>"IRF_aggr_perm_opt_3obj_v3.csv" (permanent shock)<br>"IRF_aggr_perm_counterfactual_v3.csv" (with cons. Demand elasticity)<br>"IRF_aggr_transitory_opt_3obj_v3.csv" (transitory shock)<br>"IRF_aggr_transitory_counterfactual_v3.csv" (with cons. Demand elasticity)<br>"IRF_real_output_permanent_3obj_v3.csv" (permanent output)<br>"IRF_real_output_transitory_3obj_v3.csv" (transitory output) | EBDC archive (DOI: https://doi.org/10.7805/hsmc-h261)<br>and<br>Harvard Dataverse |

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|---|---|
| **PPI / CPI Time series**<br>"ppi_cpi_xls"<br>Fred: DEUPPDMMINMEI and DEUCPIALLMINMEI | EBDC archive (DOI: https://doi.org/10.7805/hsmc-h261)<br>and<br>Harvard Dataverse<br>and freely available at FRED |
| **Meta study data on pass-through**<br>Pass-through found in research papers.xlsx (Table B.1) | EBDC archive (DOI: https://doi.org/10.7805/hsmc-h261)<br>and<br>Harvard Dataverse and freely available in respective papers |

**Replication code (Stata)**

1_master.do: This is the master.do file. Executing this file reproduces all empirical Figures and Tables in the main text and the appendix automatically.

2_ibs_data_prep.do: This file reads in the ifo Institute's Business Survey and prepares it for the analysis. Data saved in data_pt.dta.

2_ibs_fact1_2_additional.do: This file produces 1. and 2. fact in Section 2 and additional results.

- Figures 1, 2, A.2, A.3, A.4, A.5, A.6, A.7
- Tables 1 A.1, A.2

2_ibs_fact3.do: This file produces 3. fact in Section 2.

- Figures 3, 4
- Tables A3, A.4

2_ibs_fact4.do: This file produces 4. fact in Section 2.

- Figures 5, A.9
- Table A.5, A.6, A.7

2_ibs_fact5.do: This file produces 5. fact in Section 2.

- Figure 6

3_ims_1_data_prep.do: This file reads in the ifo Institute's Management Survey and prepares it for the analysis. Data saved in "cleaned_data_full.dta" and "open_text.dta"

3_ims_2_analysis.do: This file produces all results for Section 3. It draws on addition code, where 3_ims_2a_reshape.do reshapes the data, 3_ims_2b_shares.do calculates zero / incomplete / complete pass-through shares, 3_ims_2c_irfs.do calculates average

pass-through and 3_ims_2d_irfs_heterog.do calculates average pass-through by firm characteristics.

- Figures 7, 8, 9, 10, 11
- Tables C.1, C.2, C.3

4_irfs_model.do: This file plots model pass-through IRFs against survey pass-through IRFs for persistent shock.

- Figure 13

4_irfs_model_trans.do: This file plots model pass-through IRFs against survey pass-through IRFs for transitory shock.

- Figure D.6

4_irfs_model_output.do: This file plots model output IRFs.

- Figure D.8

5_graphs_literature.do: This file plots distribution of pass-through from other papers

- Figure B.1

6_ppi_cpi_plot.do: This file plots the time series of producer and consumer prices.

- Figure A.1

**Replication code of model estimation (Matlab)**

0. master.m: This is the master matlab file. Executing this file reproduces all model Figures and Tables in the main text and the appendix automatically.

1. ge1Basic_GM_estimation_replication.m: This file estimates/calibrates optimal superelasticity, menu costs, and the degree of roundabout production. The inputs for Model Tables D.1 and D.2 are generated using this file, combining the text output produced by the print function.

- Figure 12; D.2–D.5, D.7
- Tables D.1, D.2

2. ge1Basic_GM_replication.m: This file produces optimal and counterfactual impulse response functions (IRFs). The input for Model Table D.3 is based on this file, using specifications with rho_value set to 0.9 and 1.

- Figure 13; D.6, D.8
- Table D.3

3. ge1Basic_GM_profit_demand_function_replication.m: This file computes relative demand and profit functions across different degrees of superelasticity.

- Figure D.1

4. PhillipsCurve_PassThroughMatrix.m: This file calculates the Phillips Curve slope coefficients.

- Table C.4

Supporting files

All other files are supporting subroutines required to run the programs listed above and are included here for completeness:

CalcGError.m

CalcGErrorCalvoPlus.m

CalculateGInd.m

CreateProba.m

CreateProbNgr.m

CreateProbNgrRho.m

CreateRADMove.m

CreateRPMove.m

eq_kernel.m

EqSolverGE1Basic.m

EqSolverGE1CalvoPlus.m

ge1CalvoPlus.m

KernelSmoother.m

RigidityStats.m

RigidityStatsCalvoPlus.m

SimboG1S_with_cross_section_short.m

StaDistGEBasic.m

StaDistGECalvoPlus.m

UpdateG.m

UpdateGCalvoPlus.m

VFIterationGEBasic.m

VFIterationGECalvoPlus.m

Additional standard matlab routines are included in the folder "stats".

Input files from empirical evidence: irf_data_model.csv

Output storage: csv-files and mat-files