1 Introduction

This replication package contains all the code to replicate the tables and figures in Sanders (2026). An accompanying toolkit to the paper can be found on https://sandersbas.github.io/.

2 Armington Model

This section describes how to replicate the results from Section 5 "Prototypical Example: Armington Model".

2.1 Data

- **mirrortrade_dyadic_v1.dta**: This is the trade mirror trade dataset from Linsi, Burgoon, and Mügge (2023).
- **dist_cepii.xls**: This is the distance dataset from Mayer and Zignago (2011).
- **df_mirror_trade_Armington.csv**: This is the output from the script **Mirror_trade_Armington.R**.
- **countries.csv**: This is the list of relevant countries.
- **bilateral_1996.xls**: Bilateral trade flow data from 1996 obtained from the World Input Output Dataset (Timmer et al., 2012).

2.2 Scripts

- **Mirror_trade_Armington.R**: This script generates **df_mirror_trade_Armington.csv**, which serves as an input to **Master_code.m.**
- **Master_code.m**: This script generates the main outputs and figures shown in the paper.
- **counterfactual_def.m**, **get_hats.m**, **solve_Y_hat.m**: Auxiliary functions to generate counterfactual predictions.

2.3 Output

- **baseline_theta_5.mat**: Baseline estimates of the counterfactual objects of interest.
- **W_mat_ME_theta_5.mat**: Matrix with draws from estimated posterior distribution.

- **Table 1**, **Figure 1** and **Figure 9** are generated.

3 Adao, Costinot, and Donaldson (2017)

This section describes how to replicate the results from Section 6.1 "Application 1: Adao, Costinot, and Donaldson (2017)".

3.1 Data

- **mirrortrade_dyadic_v1.dta**: This is the trade mirror trade dataset from Linsi, Burgoon, and Mügge (2023).
- **dist_cepii.xls**: This is the distance dataset from Mayer and Zignago (2011).
- **df_mirror_trade_ACD**: This is the output from the script **Mirror_trade_ACD.R**.
- **valueACD.csv**: Trade flows used in Adao, Costinot, and Donaldson (2017).
- **df_grav_fit.csv**: Output from the script **Mirror_trade_ACD.R** to generate **Figure 6**.

3.2 Scripts

- **Mirror_trade_ACD.R:** This script generates **df_mirror_trade_ACD.csv**, which serves as an input to **Master_code.m.**
- **Master_code.m**: This script generates the main outputs and figures shown in the paper.
- **ci_est_err_China_all_y.m**: Code to generate confidence intervals based on the code in the the replication package of Adao, Costinot, and Donaldson (2017) for all years.
- **ci_est_err_China.m**: Code to generate confidence intervals based on the code in the the replication package of Adao, Costinot, and Donaldson (2017) for a specific year.
- **ksr.m**, **param_est.m**, **gmm_objective.m**, **excess_demand_CES.m**, **CV_CES.m**: Auxiliary functions that come from the replication package of Adao, Costinot, and Donaldson (2017).

3.3 Output

- **C1_B1000**: Output to generate **Figure 2** and **Figure 4**.
- **C1_winsor_0p2_B1000**: Output to generate **Figure 3**.
- **Figure 2**, **Figure 3**, **Figure 4, Figure 5**, and **Figure 6** are generated.

4 Allen and Arkolakis (2022)

This section describes how to replicate the results from Section 6.2 "Application 2: Allen and Arkolakis (2022)". The relevant replication package can be found on the authors' websites. The results can be obtained by adding the relevant scripts in specific locations in this replication package. First, one must create a folder "*Final_me*" within the folder "*data/interstates*". Within the folder "*Final_me*", place a subfolder called "*chiyl_matrices*". In STATA, one must install the package *vincenty*.

4.1 Scripts

- **Code_final_me_two_step.do**: Place this script in the folder "*data*". This script generates the main outputs shown in the paper.
- **asym_b_subset.m**: Place this auxiliary script in the folder "*data/interstates/Final_me*".
- **fn_AA_eqm_yl_counterfactual.m**, **fn_AA_calc_eqm_counterfactual.m**: Place these auxiliary scripts in the folder "*data/interstates/Final_me*".
- **Code_final_resid_plot.do**: Code to generate **residuals.csv**.
- **Code_final_np_gravity.do**: Code to generate **df_grav.csv**.
- **resid_plot.m**: Place this script in the folder "*data/interstates/Final_me*". It contains code to generate **Figure 7**.
- **np_gravity.m**: Place this script in the folder "*data/interstates/Final_me*". It contains code to generate **Figure 8**.

4.2 Output

- **me_two_step.csv**: Matrix with draws from estimated posterior distribution, used to generate **Table 2** and **Table 3**.
- **residuals.csv**: Output from the script **Code_final_resid_plot.do**, needed to generate **Figure 7**.
- **df_grav.csv**: Output from the script **Code_final_np_gravity.do**, needed to generate **Figure 8**.
- **Table 2**, **Table 3**, **Figure 7** and **Figure 8** are generated.

References

Adao, R., A. Costinot, and D. Donaldson (2017): "Nonparametric counterfactual predictions in neoclassical models of international trade," *American Economic Review*, 107, 633–689.

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Sanders, B. (2026): "Measurement Error and Counterfactuals in Quantitative Trade and Spatial Models," *arXiv preprint arXiv:2311.14032*.

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