Guide to Replication Package for "An Instrumental Variable Approach to Dynamic Models"

Overview

This replication package contains the code needed to produce all outputs in the paper, including the online appendices.

Data Availability and Provenance Statement

The paper uses a combination of synthetic data and observational data on ready-mix concrete establishments. The codes included in the package generate the synthetic data. The concrete data come from Collard-Wexler (2014) and is available with a Creative Commons Attribution 4.0 International Public License. For convenience, the data is also included in the replication package.[1]

Computational requirements

All results can be replicated using Stata and MATLAB. The code was last run on Stata MP 16.1 and MATLAB 2019b. Some of the MATLAB code involves grid searches that can take multiple days. As indicated in the scripts, those steps should be parallelized as much as possible to minimize run times.

Scripts

Here is the full list of the scripts that one needs to run to produce all tables and figures in the paper, along with the folder in which the relevant scripts are. In order to produce each result in the "Figure/Table" field, first run any required codes in the "Note" field, then run the code in the "Program" field. All .m scripts can be run on MATLAB and all .do scripts can be run on Stata.

Figure/Table #	Program	Folder	Output	Note
Figure 3	Figures_3_7.m	without W	figure3.png	
Figure 4	Figures_4_8.m	without W	figure4.png	
Figure 5	Figure_5.m	with W	figure5.png	Requires running Figures_3_7.m first
Table 4	Tables_4_5.m	without W	Displayed in MATLAB	Requires running Figures_4_8.m first
Table 5	Tables_4_5.m	without W	Displayed in MATLAB	Requires running Figures_4_8.m first

[1] Collard-Wexler, Allan. "Mergers and Sunk Costs: An Application to the Ready-Mix Concrete Industry." American Economic Journal: Microeconomics 6, no. 4 (November 2014): 407–47. https://doi.org/10.1257/mic.6.4.407.
See also the associated replication package: Collard-Wexler, Allan. Replication data for: Mergers and Sunk Costs: An Application to the Ready-Mix Concrete Industry. Nashville, TN: American Economic Association [publisher], 2014. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2019-10-12. https://doi.org/10.3886/E114426V1.

Figure/Table #	Program	Folder	Output	Note
Table 6	Table_6_7.do	concrete	Displayed in Stata	
Table 7	Table_6_7.do	concrete	Displayed in Stata	
Table 8	Table_8.m	concrete	Displayed in MATLAB	Requires running master.m first
Table 9	Table_9.m	concrete	Displayed in MATLAB	Requires running master.m first
Table 10	Table_10.m	concrete	Displayed in MATLAB	Requires running master.m first
Table 11	Table_11.m	concrete	Displayed in MATLAB	Requires running master.m first
Figure 7	Figures_3_7.m	without W	figure7.png	
Figure 8	Figures_4_8.m	without W	figure8.png	
Figure 9	Figure_9.m	oligopoly	figure9.png	