Read Me

Regressions and Figure 1

This figure and analysis requires a WRDS subscription, available here: https://wrds-www.wharton.upenn.edu/.

1. Download from compustat (accessible through WRDS) an annual file starting in June 1950 that includes the following variables:
    a. SALE, EMP, AT, PPEGT, XOPR
    b. Include the SIC code, NAICS, and gvkey for each firm
    c. Include all firms.
    d. Download as a csv file, and place this file in the "Compustat/" directory and name it 'compustat_data.csv'
2. Download the following series from FRED: A008RD3Q086SBEA, GDPDEF. Place in same directory. Note that these .csv files are already present in the replication files.
3. Then run 'clean_compustat_data.R' and 'fact1.R'.

Model and Figures 2-11

The code for the different versions of the model with heterogeneous firms is contained in the folder "Model – Free Entry." These files require Matlab, as well as the CompEcon Toolbox from Miranda and Fackler, available here: https://pfackler.wordpress.ncsu.edu/compecon/154-2/.

- In each folder that begins with "free_entry," there is a file "Start.m" that solves the model.
    - The variable mit_flag, set in the first few lines of the file, sets which kind of dynamic exercise to run.
    - If mit_flag = 0, only solve the steady state.
    - If mit_flag = 1, run the entry cost shock
    - If mit_flag = 2, run the exit shock (not in the paper)
    - If mit_flag = 3, run the TFP shock
- Each folder corresponds to a different specification of the model:
    - Free_entry: The baseline model in the paper
    - Free_entry_alt_lifecycle: the exercise in appendix E
    - Free_entry_ces: The CES model
    - Free_entry_ces_no_adj_cost: The model with CES demand and no labor adjustment cost
    - Free_entry_labor_cost: The baseline model where the entry cost is denoted in units of labor
    - Free_entry_firm: The model calibrated to match facts about firms (rather than establishments)
    - Free_entry_GJP: The model where the entry cost is as in Guiterrez, Jones and Phillippon
    - Free_entry_sdf: The model where the stochastic discount factor varies
    - Free_entry_target_lifecycle: The model where the adjustment cost is used to target average size at age 5

    - No_entry_or_exit: the model without entry or exit
    - Free_entry_labor_homo_firm: The model with no lifecycle (but heterogeneous firms)

The code for the model with symmetric equilibria is in the folder "Model – Symmetric." These files are written as Jupyter notebooks, in python. They require the sequence-state-jacobian package, which can be downloaded here: https://github.com/shade-econ/sequence-jacobian.

*Figure 2*:

- After running "Start.m" in the folder *free_entry_frictionless*, run "plot_policy.m"

*Figure 3:*

- After running "Start.m" in the folder *free_entry*, run "plot_lifecycle.m"

*Figures 4, 5, and 7:*

- Run "Start.m" with "mit_flag = 1" in *free_entry*.
- Then run "plot_irf_entry_scaled.m" in the folder *mit_shocks_free_entry*.

*Figure 6:*

- Run "entry_shock.m" in *mit_shocks_free_entry/decomposition*

*Figure 8*

- After running "Start.m" in the folders *free_entry, free_entry_ces, free_entry_ces_no_adj_cost,* and *free_entry_frictionless*, all with mit_flag = 1, then run *compare_4_models.m* in *mit_shocks_free_entry*.

*Figure 9*

- After running the entry cost shock in the folders *free_entry* and *free_entry_labor_homo_firm*, then run *compare_role_of_lifecycle.m* in *mit_shocks_free_entry/*.

*Figure 10*

- Run the jupyter notebooks in "Model – Symmetric"
- Then run the file in "mit_shocks_free_entry" called compare_role_of_dispersion_new.m

*Figure 11*

- After running the TFP shocks (set mit_flag = 3 and run "Start.m") in *free_entry* and *no_entry_or_exit,* then run the file *mit_shocks_free_entry/compare_tfp_shock_role_of_entry.m*.

*Figure 12*

The BDS data can be downloaded from here: https://www.census.gov/data/datasets/time-series/econ/bds/bds-datasets.html. Download the csv file "Economy-wide" and the csv file "Establishment Age." Place those in the folder BDS/figure_12A. Also download the series POPTHM from FRED (as a csv) and place in the same folder. Note that all of these files are already present in the replication files.

Then run the file “Introduction_figures.R” in that folder. This produces figure 12A.

For the remaining panels:

- Download the FRED series PRS85006172 and ‘EMRATIO’
- Then run *plot_emp_pop.R* and *plot_labor_share.R*.

Appendix figures

*Figure A1 and A2*

- Run *Start.m* in the folder *selection_model* with “mit_flag = 1.” Then run *plot_irf_tfp_shock* in *mit_shocks_selection_model* and *plot_irf_entry_cost_shock* in *mit_shocks_selection_model*.

*Figure A3*

- Run *Start.m* in the folder *free_entry_firms* and then run *plot_irf_entry_scaled_firms.m* in *mit_shocks_free_entry*.

*Figure A4*

- Run *Start.m* in the folder *free_entry_alt_lifecycle* and then run *plot_lifecycle.m* in that same folder.

*Figure A5*

- The impulse response is computed by running *Start.m* in *free_entry_sdf*. It is then plotted in *mit_shocks_free_entry/plot_irf_entry_scaled_sdf.m*.

*Figure A6*

- The impulse response is computed by running *free_entry_target_lifecycle/Start.m*. The plot is made by running *mit_shocks_free_entry/compare_lifecycle_calibrations.m*.

*Figure A7 and A8*

- Run these impulse responses in *free_entry/Start.m* and *free_entry_labor_cost/Start.m* with “mit_flag = 3.” Then plot in the scripts compare_tfp_shock_role_of_entry_fixed_entry_cost.m and compare_tfp_shock_role_of_entry_labor_entry_cost.m in the folder *mit_shocks_free_entry*.