Replication Package for "Human Capital, Female Employment, and Electricity: Evidence from the Early 20th-Century United States" by Daniela Vidart

Overview

The code in this replication package constructs the results found in the analytical, quantitative, and empirical sections of the paper together with their corresponding appendices in the Online Appendix. In addition, this package also construct the results found in the historical background appendix (Online Appendix A).

Data Availability Statement

- The results found in the analytical section of the paper, and corresponding appendix, follow from plotting analytical results and can be entirely replicated using the respective code in this package in Matlab.
- The results found in the quantitative section of the paper, and corresponding appendices, follow from model simulations and can be entirely replicated using the respective code in this package in Matlab.
- The results found in the empirical section of the paper, and corresponding appendices, combine the following data:
  - Archival electrification data from McGraw Publishing Company (1911) and McGraw Publishing Company (1919) (found in data/counties_capmeasuresALL.dta in this package)
  - Data from the full-count confidential census data with names from 1910–1940 managed by IPUMS and the NBER (Ruggles et al. (2019)). This data may be obtained with Data Use Agreements with IPUMS and the NBER. Researchers interested in access to the data can contact ipumsres@umn.edu. The data is processed directly in the NBER server. The replication package for the empirical portion of the paper can be run directly in this server.
- The results found in the historical background appendix (Appendix A) can be entirely replicated using the respective codes in this package in Matlab and Stata.

Computational requirements

- The replication files for the analytical section, quantitative section, and historical background appendix of the paper were run in Matlab2020a in a Mac with Quad-Core Intel Core i7, 32GB of ram. The analytical graphs can be generated in less than 10 seconds. The quantitative replication with all graphs and results can be run in approximately 20 minutes. The historical background graphs can be generated in less than 10 seconds.[1] All needed files for each of these exercises are included in the package.
- The replication for the empirical section of the paper can be run in Stata in the NBER server, and can take up to a day for the setup, and several hours per regression thereafter.[2] The Stata packages used for this purpose are:
  - acreg
  - reghdfe

  These packages can be installed using ssc install in the NBER server, and have already been noted in the main empirical file.

Description of programs/code

The code in this replication package constructs the results found in the analytical, quantitative, and empirical sections of the paper (including the results pertaining to each of these sections found in the Online Appendix), in addition to the historical background appendix (Online Appendix A). The analytical, quantitative, and historical background replications can be run using Matlab in a local machine, while the empirical replication can be run in Stata in the NBER server. Three main files run all the code to generate the figures and tables in each of these sections. These files are:

A. programs/main_analytical.m

B. programs/main_quantitative.m

C. programs/main_empirical.do

[1] The historical background file also references one graph that was produced in Stata. The data for this graph is included in the packages, and this code takes less than 5 seconds to run.

[2] Note, the first set of results in the empirical replication file, concerning the electrification maps, and results concerning aggregate cohort- or age-group- level data, (noted in the empirical replication file) can be run in a local machine.

D. programs/main_historicalbackground.m

In your local machine, make sure to type the right path in row 8 of the main analytical file: main_analytical.m, the main quantitative file: main_quantitative.m, and the main historical background file: main_historicalbackground.m.

In the NBER server, make sure to type the right paths in rows 12, 16–19, and 25 of the main empirical file: main_empirical.do.

References

McGraw Publishing Company (1911). *McGraw Central station directory: A complete list of electric light and power companies with data.* McGraw-Hill, New York City.

McGraw Publishing Company (1919). *McGraw Central station directory: A complete list of electric light and power companies with data.* McGraw-Hill, New York City.

Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., and Sobek, M. (2019). *IPUMS USA: Version 9.0 [dataset].* IPUMS, Minneapolis, MN.