This directory contains data and code that replicates tables and figures for the following paper:

Title: Health Risk and the Value of Life

Authors: Daniel Bauer, Darius Lakdawalla, and Julian Reif

One master script runs all of the code. It was last run on a Windows 10 Desktop with 32 gigabytes of RAM and an i7-8700 CPU 3.20 GHz processor. The runtime was approximately 20 hours.

Software requirements

Stata version 17 or higher

- Add-on packages required: **rscript** and **texsave**
- Note: add-on packages are included in **scripts/libraries/stata** and do not need to be installed by user

R version 4.0.2 or higher (available for free from: https://cloud.r-project.org)

- Add-on packages required: **rootSolve**

Directory structure

```
replication                      # Replication package folder
├── data                         #   Read-only data
├── results                      #   Output files
│   ├── figures                  #     Figures (PDF)
│   ├── intermediate             #     Intermediate results
│   └── tables                   #     Tables (LaTeX)
├── scripts                      #   Code
│   ├── libraries/stata          #     Add-on Stata packages
│   ├── programs                 #     Custom R programs
│   ├── 1_process_fem_data.do
│   ├── 2_fem_analysis.do
│   └── 3_make_tables_figures.do
└── run.do                       #   Master script
```

Instructions

Executing the master script **run.do** will run the analysis and generate all tables and figures. Before running this script, you must make one edit to line 19:

1. Define a global macro, **Longevity**, that points to the directory containing this README file

For example, that line should look something like the following:

global Longevity "C:/Users/jdoe/thisfolder"

Data availability statement

We certify that the authors of the manuscript have legitimate access and permission to use the data employed in this manuscript.

Datasets

Future Elderly Model

The Future Elderly Model is a publicly available model with documentation available online:

https://roybalhealthpolicy.usc.edu/fem/technical-specifications/

When running the FEM, we assumed zero GDP growth, zero Medical CPI growth, and no all-cause mortality reduction adjustment. The output from this model, which is used in this study's analysis, is available in:

/data/FEM

Non-automated figures

The Excel data used for Figures 1 and 2 are available in:

/data/figures

Descriptions of scripts

run.do is a master script that sets up the environment, creates output folders, and then calls other scripts.

1_process_fem_data.do

This script imports and processes the raw output from the Future Elderly model.

2_fem_analysis.do

This script calls R scripts that are used to calculate the value of health and longevity.

3_make_tables_figures.do

This script uses creates all the tables and figures from the paper.

Note: the file **/scripts/programs/README.auxiliary.pdf** provides additional documentation for the R scripts that calculate the value of health and longevity

Lists of exhibits

Figure	Source script	Line number	Output file	Notes
Figure 1a	3_make_tables_figures.do		interior_solution_1corner.pdf	
Figure 1b	3_make_tables_figures.do		interior_solution_2corners.pdf	
Figure 2	3_make_tables_figures.do		medical_spending.pdf	
Figure 3	3_make_tables_figures.do		c_vsl_shock.pdf	
Figure 4a	3_make_tables_figures.do		mc_vsl_variance_allstates.pdf	
Figure 4b	3_make_tables_figures.do		mc_vsl_variance.pdf	
Figure 5a	3_make_tables_figures.do		mc_vsl_change.pdf	
Figure 5b	3_make_tables_figures.do		mc_vsly_change.pdf	
Figure 6	3_make_tables_figures.do		mc_vsl_vsly_age70.pdf	
Figure 7	3_make_tables_figures.do		mc_vsi_vsiy_age70.pdf	
Figure 8a	3_make_tables_figures.do		robustness_consumption.pdf	
Figure 8b	3_make_tables_figures.do		robustness_vsl.pdf	
Figure 8c	3_make_tables_figures.do		robustness_mc_vsly_age70.pdf	
Figure 8d	3_make_tables_figures.do		robustness_mc_vsiy_age70.pdf	
Figure 9a	3_make_tables_figures.do		robustness2_consumption.pdf	
Figure 9b	3_make_tables_figures.do		robustness2_vsl.pdf	
Figure 9c	3_make_tables_figures.do		robustness2_mc_vsly_age70.pdf	
Figure 9d	3_make_tables_figures.do		robustness2_mc_vsiy_age70.pdf	
Table 1	3_make_tables_figures.do		summary_stats.tex	