Replication Materials, **Model Component**, for

WHY DO COUPLES AND SINGLES SAVE DURING RETIREMENT? HOUSEHOLD HETEROGENEITY AND ITS AGGREGATE IMPLICATIONS

by Mariacristina De Nardi, Eric French, John Bailey Jones and Rory McGee
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Overview: This file describes how to run the life-cycle model used in our paper, using the computer code and input files found in the model archive.

1. **The data inputs used in the model are housed in the "data" subdirectory.**
   a. The main data file is "wlthmat_NEW101618.out".
   b. The file "incprof_120717.out" contains income profiles.
   c. The file "hstransh_120717_specB.out" contains the coefficients of the multivariate logit model for the demographic transitions.
   d. The file "wlthshk10.txt" is also an input file but plays no meaningful role in the analysis and has been filled with zeros.
   e. If you are interested only in the data, go to the data/" directory, and read the documentation file provided there.

2. Because the programs call each other, and pass files between themselves, **the program will work only if directories are properly specified**. The programs are set up to work in the "\model" directory ().

3. **The codes solving for the value functions and simulating households' histories are written in the C language. We use GAUSS for the econometrics** (we use version 19.1.2 build 4494). The GAUSS programs call the C programs, send them the necessary inputs – including parameter values and initial values of the state variables – and retrieve the simulated histories. The GAUSS programs then use the simulated histories and the data to compute the GMM criterion function.

4. The two master programs are "**couplesave31.gau**", which solves the main model, and "couplesave31.gau_isingles.gau", which solves a version of the model restricted to initial singles. The subdirectory "opt" contains GAUSS procedures used by the master programs, while the subdirectory "ccode" contains the C programs that find the decision rules and simulate individual histories.

5. The subdirectory "iofiles" is used to pass information between the C programs and GAUSS, while "shk" is used to hold simulated shock histories. Files in these two subdirectories will have the GAUSS *.fmt format. (The C code is able to read in this format.) The "graphs" subdirectory holds data to be read into the graphing procedures, and graphs in *.pdf format. The subdirectory "output" contains files produced by the C programs, in ASCII

format. All of these subdirectories are empty but will be populated once the programs start.

6. **C code**
   a. Requirements: Multi-core workstation; Windows; Intel C++ compiler.
   b. The code is set up to run in parallel with up to 72 processors. You can adjust for your computer this by changing "NUM_THREADS" and rebuilding the executable.
   c. The main script is wealth_couples_2022_1.c. You will need to modify the directories listed within this script to be consistent with your directory structure.
   d. We use the Intel C++ compiler (version 19.2[1]) to compile the code. The following is a complete list of the compiler flags we use when compiling the code

```
/permissive- /MP /GS /TC /Qopenmp /W3 /Gy /Zc:wchar_t /Zi /O2
/Fd"x64\Open_Release\vc142.pdb" /Zc:inline /fp:precise /D "NDEBUG" /D
"_CONSOLE" /D "_UNICODE" /D "UNICODE" /Qipo /Zc:forScope /Oi /MD /FC
/Fa"x64\Open_Release\" /EHsc /nologo /Fo"x64\Open_Release\" /Qprof-dir
"x64\Open_Release\"
/Fp"x64\Open_Release\wealth_couples_2022_1_LARS.pch"
```

   (The quotation marks should be included.)
   e. The main GAUSS script calls "runintel2022_1.bat" to load the intel environment and call the C executable file.

7. The settings in each program are currently configured to solve and simulate the model with its baseline parameter values, and then produce some graphs (including Figures 1,3,7,8). The output you get should be identical to that in "couplesave31.out."

8. If you want **to produce the graphs that track a single cohort over 25 years, change "job" from 5 to 7**. If you want to compare two cases on the same 25-year graph,
   a. Set "basecase" to 1 and run the model for the base specification.
   b. Change the specification, set "basecase" to 0, and run the model again.

9. Details on how to replicate the experiments or alternative specifications described in the paper can be found int the file "**ResultsGuide_DFJM_JPE.xlsx**".

10. Please contact us if something is unclear, so that we can improve the documentation, and make it clearer for everyone.

[1] Specifically Intel® C++ Compiler – toolkit version: 2021.2.0, extension version 21.0.16, Package ID: w_oneAPI_2021.2.0.243