Replication Data and Programs for

"An Empirical Evaluation of the Toolbox Model of Lottery Choices," REStat

Notes on HO Data Files:

- HOparm.data contains the lottery probabilities for the 100 choice tasks.
  100x8 matrix: each row contains $(p_j^A, j=1,...,4)$, $(p_j^B, j=1,...,4)$

- HOch.data contains the choices for the 100 tasks and 80 subjects
  100x80 matrix: each entry contains {1, 2 or 3}; "1" = A, "2" = B, and "3" = indifferent. All indifferent choices were skipped when analyzing data. Rows are tasks, and column are subjects.

Notes on HR Data Files:

- gainlot.data contains the lottery probabilities for the 60 choice tasks.
  60x8 matrix: each row contains $(p_j^A, j=1,...,4)$, $(p_j^B, j=1,...,4)$

- gainch.data contains the choices for the 60 tasks and 63 subjects
  63x60 matrix: each entry contains {1, 2 or 3}; "1" = A, "2" = B, and "3" = indifferent. All indifferent choices were skipped when analyzing data. Rows are subject, and column are tasks.

- first30.data contains the presentation order out of 60 of the first presentation of the 30 unique tasks.
- second30.data contains the presentation order out of 60 of the second presentation of the 30 unique tasks.
- sort30.data is a 30x8 matrix containing the lottery probabilities for just the 30 unique tasks (used in simulation programs); i.e. a submatrix of gainlot.data.

Notes on Forecasting Programs Used in Section 3.3

For the HO data:

- eutHO75p.f is the fortran program that estimates the EUT model on the first 75, and then uses the estimated model to forecast the LL of the second 25.
- eutHO75p.out is my output file for eutHO75p.f.
- toolHO975.f is the fortran program that estimates the full TB model on the first 75, and then uses the estimated model to forecast the LL of the second 25.

- toolHO975.out is my output file for toolHO75.f.
- toolHO975.xls is an Excel file containing the outputs of eutHO75p and toolHO975, and computes the difference of the predicted LL across models.

For the HR data:

- eutHR30p.f is the fortran program that estimates the EUT model on the first presentation of 30, and then uses the estimated model to forecast the LL of the second presentation.
- eutHR30p.out is my output file for eutHO30p.f.
- toolHR930.f is the fortran program that estimates the full TB model on the first presentation of 30, and then uses the estimated model to forecast the LL of the second presentation.
- toolHR930.out is my output file for toolHR930.f.
- toolHR930.xls is an Excel file containing the outputs of eutHO30p and toolHR930, and computes the difference of the predicted LL across models.

Notes on Programs that Simulated Forecasts in Section 4.1

- mxsim25h0d.f is the fortran program that generates 200 simulations of LL_{FULL} - LL_{EUT} under the null hypothesis that the DGP = EUT. It uses eut75a.data, which contains the four parameter estimates per subject for the EUT model based on the four subsets of 75 tasks and the actual data.
- mxsim25h1a.f is the fortran program that generates 200 simulations of LL_{FULL} - LL_{EUT} under the hypothesis that the DGP = FULL. It uses tools75a.data, which contains the parameter estimates for the FULL model based on the four subsets of 75 tasks and the actual data.
- mxsim25.xls is the Excel file that contains the outputs of the above two programs, analyzes the distribution of the differences, and computes the kernel density graph.

Notes on Programs that Simulated Forecasts in Section 4.2

- mxsim30h0a.f is the fortran program that generates 199 simulations of LL_{FULL} - LL_{EUT} under the null hypothesis that the DGP = EUT. It uses sag30.data, which contains the parameter estimates for the EUT model from eutHR30p.f based on the actual data.
- mxsim30h1a.f is the fortran program that generates 199 simulations of LL_{FULL} - LL_{EUT} under the hypothesis that the DGP = FULL. It uses tools930a.data, which contains the parameter estimates for the FULL model from tools930.f based on the actual data.

- mxsim30.xls is the Excel file that contains the outputs of the above two programs, analyzes the distribution of the differences, and computes the kernel density graph.

Notes on Regressions in Section 4.3

The regressions of the forecast differences conditional on the FULL model fitting significantly better than the EUT model are given in

- HO data: mxsim25.xls (which is under the section 4.1 subdirectory) on Sheet mxsim25h1, lines 224-233.
- HR data: mxsim30.xls (which is under the section 4.2 subdirectory) on Sheet mxsim30h1, lines 220-229.

Notes on Programs that Generated Table 1.

HO Data:

- FULL model: tool9HO.f is the fortran program for this column.
- EUT-only model: eutHO.f is the fortran program for this column.
- TB-EUT: tool9HOz is the fortran program for this column.

HR Data:

- FULL model: tool9HR.f is the fortran program for this column.
- EUT-only model: eutHR.f is the fortran program for this column.
- TB-EUT: tool9HRb is the fortran program for this column.

The *.out files are my output files for these programs.