Guide to the data and code for replicating Section 8 of
"*Relaxed Optimization: How Close is a Consumer to Satisfying First-Order Conditions?*"
by de Clippel and Rozen

The dataset used for Section 8 is ChoiKarivMullerSilverman_actualandrandom.dta (provided). To obtain the figures and facts in the paper, run Figures.do in Stata.

The variables in the final dataset are:
actual: 1 if coming Choi, Kariv Muller and Silverman (2014)'s dataset, and missing (.) otherwise
placebo: 1 if coming from the randomly simulated Bronars data, and missing (.) otherwise
id_member: an identifier that is unique only within each category (actual or Bronars' data)
tmi_nondiff: the value of the FDI (over all regular preferences) for observations in the actual data[1]
tmi_combined_nondiff: the value of the FDI with respect to regularity and state independence for observations in the actual data
tmi_eunondiff: the value of the FDI with respect to risk averse expected utility for observations in the actual data
emax: the value of Afriat's CCEI for observations in the actual data
tmi_nondiff_placebo, *tmi_combined_nondiff_placebo*, *tmi_eunondiff_placebo*, and *emax_placebo*: same as above but corresponding to observations in the Bronars' data

To reconstruct the final dataset, take the following steps (in the order listed below). Stata and Matlab are needed (these codes were last run on Stata 16.1 on MacOS and Matlab R2019a on Windows 10).

1- Place the replication files provided and the dataset CKM_II_data.dta available through the link below into the same folder:
Choi, Syngjoo, Kariv, Shachar, Müller, Wieland, and Silverman, Dan. Replication data for: Who Is (More) Rational? Nashville, TN: American Economic Association [publisher], 2014. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2019-12-06. https://doi.org/10.3886/E116126V1

2-Run the file Start.do in Stata

3-Go to the folder FDI-EU-Matlab. The file IneqSystem.m computes the FDI for risk averse expected utility for each individual in the Choi et al (2014) dataset, and should be run on Matlab. Depending on system speed, this can take a couple of hours to run. Because the Bronars' data is twenty times longer, we found it useful to divide that data into three similarly-sized portions that we have provided for convenience (choices_and_prices_random_A.csv, choices_and_prices_random_B.csv and choices_and_prices_random_C.csv) and run in parallel

[1] `tmi' stands for `Tradeoff Misperception Index', which was our name for the First-Order-Condition Departure Index (FDI) in early versions of the paper.

the Matlab code for each (IneqSystemA.m, IneqSystemB.m, and IneqSystemC.m, respectively). Depending on system speed, this step can take a few hours to complete.

4-In the folder EMAX-Matlab download and unzip the revpref package created by the Group for the Advancement of Revealed Preferences, http://www.revealedpreferences.org/assets/CodeAndData/revpref.zip.
Make sure the functions "warshall.m" and "garpe.m" are in the same level of directory of emax.m". Then run in Matlab both Calculations.m and Calculations-Random.m.

5-Back in the main folder, run the file Finalize.do in Stata