

Overview

This replication package generates all tables, figures, and in-text figures of the paper “Measuring Unfair Inequality: Reconciling Equality of Opportunity and Freedom from Poverty.”

- All raw data are stored in 01_rawdata
- Main processed data are stored in 03_usedata
- All tables are outputted to 04_results/tables
- All figures are outputted to 04_results/figures
- All in-text figures are stored in 04_results/results.dta

Output is generated using Stata 17.

The replicator should expect the code to run about 2 hours.

Data Availability and Provenance Statements

The following data sets are used for this paper:

IPUMS-CPS, ASEC

Citation	Flood et al. (2021)
Location in archive	01_rawdata/cps/cps_00003.dat
Download address	https://doi.org/10.18128/D030.V9.0
Date of last download	20.11.2019
Data Dictionary	Available at https://cps.ipums.org/cps/codebooks.shtml#asec_codebooks

Occupation Crosswalks

Citation	Autor and Dorn (2013)
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Location in archive 01_rawdata/crosswalks/occ1970_occ1990dd.dta
01_rawdata/crosswalks/occ2000_occ1990dd.dta

Download address https://www.ddorn.net/data/occ1970_occ1990dd.zip
https://www.ddorn.net/data/occ2000_occ1990dd.zip

Date of last download 27.02.2018

Data Dictionary Available at https://www.ddorn.net/data/Dorn_Thesis_Appendix.pdf

European Social Survey (ESS)

Citation NSD (2018)

Location in archive 01_rawdata/ess/ESS9[Country].dta

Download address [doi:10.21338/NSD-ESS9-2018](https://doi.org/10.21338/NSD-ESS9-2018)

Date of last download 11.11.2019

Data Dictionary Available at https://www.europeansocialsurvey.org/data/country_index.html

Panel Study of Income Dynamics (PSID)

Citation Survey Research Center, Institute for Social Research, University of Michigan (2019)
The Ohio State University (2019)

Location in archive We are not permitted to share the anonymized microdata of the PSID as part of the replication archive. However, we created a dedicated data archive at the PSID repository from which the data can be downloaded. To access the data archive use the following link:
<https://doi.org/10.3886/E151641V1>.

Download address	https://www.cnefdata.org/data/data-application https://simba.isr.umich.edu/Zips/ZipMain.aspx
Date of last download	24.10.2019
Data Dictionary	Available at https://uploads-ssl.webflow.com/5f6e0dd55d5ed36431d960c4/5fb58065d697a6d2fd25659c_PSID_CNEF_Codebook.pdf and https://psidonline.isr.umich.edu/Guide/documents.aspx

European Union Statistics on Income and Living Conditions (EU-SILC) Cross-sectional 2007-2015 (rev.5, June 2015)

Citation	EUROSTAT (2015)
Location in archive	01_rawdata/silc/[Country]/[Year]/UDB_c[Country][Year-2000]D.csv 01_rawdata/silc/[Country]/[Year]/UDB_c[Country][Year-2000]H.csv 01_rawdata/silc/[Country]/[Year]/UDB_c[Country][Year-2000]P.csv 01_rawdata/silc/[Country]/[Year]/UDB_c[Country][Year-2000]R.csv We are not permitted to share the anonymized microdata of EU-SILC as part of the replication archive. The current legal framework enables access to anonymized microdata available at Eurostat for scientific purposes (Commission Regulations (EU) 557/2013; (EC) No 1104/2006; (EC) No 1000/2007; Council Regulation 322/97). The access is restricted to universities, research institutes, national statistical institutes, central banks inside the EU, as well as to the European Central Bank. Individuals cannot be granted direct data access. A guide to applying for access can be found at http://ec.europa.eu/eurostat/documents/203647/203698/How_to_apply_for_microdata_access.pdf/82d98876-75e5-49f3-950a-d56cec15b896 .
Download address	A download link will be shared upon successful application (see above).
Date of last download	21.09.2017

Data Dictionary Available at <https://www.gesis.org/en/missy/metadata/EU-SILC/>

Penn World Tables 9.1

Citation Feenstra et al. (2015)

Location in archive 01_rawdata/other/pwt91.dta

Download address <https://www.rug.nl/ggdc/docs/pwt91.dta>

Date of last download 28.09.2021

Data Dictionary Available at <https://www.rug.nl/ggdc/productivity/pwt/pwt-documentation>

Poverty Lines (Joliffe et al. 2016)

Citation Joliffe et al. (2016)

Location in archive 01_rawdata/povlines/joliffeetal.xlsx

Download address https://static-content.springer.com/esm/art%3A10.1007%2Fs10888-016-9327-5/MediaObjects/10888_2016_9327_MOESM1_ESM.pdf

Date of last download 18.11.2019

Data Dictionary See Joliffe et al. (2016) for description.

National Poverty Line (US)

Citation U.S. Bureau of the Census (2019)

Location in archive	01_rawdata/povlines/hstpov1.xls
Download address	https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-people/hstpov1.xls
Date of last download	28.09.2021
Data Dictionary	Available at https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar21.pdf

Poverty Line (EUROSTAT)

Citation	EUROSTAT (2021)
Location in archive	01_rawdata/povlines/ilc_li01-1.xls
Download address	https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_li01&lang=en
Date of last download	28.09.2021
Data Dictionary	Available at https://ec.europa.eu/eurostat/cache/metadata/en/ilc_esms.htm

Under-reporting of transfer income (US)

Citation	Meyer et al. (2015)
Location in archive	01_rawdata/other/reporting_meyer.xls
Download address	https://harris.uchicago.edu/files/underreporting.pdf
Date of last download	19.11.2019

Data Dictionary See Meyer et al. (2015) for description.

Under-reporting of transfer income (Europe)

Citation EUROSTAT (2013)

Location in archive 01_rawdata/other/reporting_eurostat.xls

Download address <https://ec.europa.eu/eurostat/documents/3888793/5858173/KS-RA-13-023-EN.PDF/7e1dcfb2-2735-4334-9b0a-5a95af934b1d>

Date of last download 14.02.2020

Data Dictionary See EUROSTAT (2013) for description.

Statement about Rights

- I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.
- I certify that the author(s) of the manuscript have documented permission to redistribute/publish the data contained within this replication package.

Summary of Availability

- All data **are** publicly available.
- Some data **cannot be made** publicly available.
- **No data can be made** publicly available.

Computational requirements

Software Requirements

- Stata (code was last run with version 17).
- All additional user-programmed packages are stored in the folder 02_scripts/libraries/stata.
- All additional program routines created by the authors of this paper are stored in the folder 02_scripts/programs.

Controlled Randomness

- Random seed is set at line 81 in file `master.do`. The default is 3498.

Memory and Runtime Requirements

Approximate time needed to reproduce the analyses on a standard desktop machine (PC (64-bit x86-64), Intel(R) Core(TM) i7-8700 CPU @ 3.20GHz, 16GB RAM):

- <10 minutes
- 10-60 minutes
- 1-8 hours
- 8-24 hours
- 1-3 days
- 3-14 days
- > 14 days
- Not feasible to run on a desktop machine, as described below.

Description of programs/code

`master.do` sets folder structure, paths, and globals to run the analyses. Furthermore, it executes all relevant script files for generating tables, figures, and in-text figures from the raw data. In the following we list the purpose of each script file that is called from `master.do`:

- `02_scripts/10_pull_ctryname.do`: Generate mapping between country acronyms and full country names.
- `02_scripts/11_pull_silc`: Merge EU-SILC files, extract relevant variables, and store in dta-format.
- `02_scripts/12_pull_psid.do`: Merge PSID files, extract relevant variables, and store in dta-format.
- `02_scripts/13_pull_cps.do`: Extract relevant CPS data and store in dta-format.
- `02_scripts/14_pull_ess.do`: Extract relevant ESS data and store in dta-format.
- `02_scripts/15_pull_occ.do`: Extract and complement occupation crosswalks, and store in dta-format.
- `02_scripts/16_pull_ppp.do`: Extract relevant price deflator data and store in dta-format.

- *02_scripts/17_pull_povline.do*: Construct relevant poverty indicators and store in dta-format.
- *02_scripts/18_pull_underreporting.do*: Extract and complement data on transfer income under-reporting, and store in dta-format.
- *02_scripts/19_pull_psidreweight.do*: Create PSID reweighting factors based on match with CPS-ASEC and store in dta-format.
- *02_scripts/21_prep_silc.do*: Create all relevant variables and construct analysis sample for EU-SILC.
- *02_scripts/22_prep_psid.do*: Create all relevant variables and construct analysis sample for PSID.
- *02_scripts/31_estimate.do*: Calculate point estimates of unfair inequality incl. bootstrap repetitions.
- *02_scripts/32_decomposition.do*: Decompose unfair inequality into its underlying components using Shapley value decomposition.
- *02_scripts/41_results.do*: Consolidate all results (incl. the calculation of bootstrapped standard errors) and generate the overview file *04_results/results.dta*.
- *02_scripts/42_graphs.do*: Generate all figures in the main body, the appendix and the supplementary material of the paper.
- *02_scripts/43_tables.do*: Generate all tables in the main body, the appendix and the supplementary material of the paper.

Additional programs that are called from within the previous script files include:

- *02_scripts/programs/partition.do*: Partitions the population into types and tranches.
- *02_scripts/programs/norm.do*: Calculates the various norm distributions.
- *02_scripts/programs/measure.do*: Calculates individual contributions to the measures of interest (inequality, unfair inequality, poverty).

Instructions to Replicators

1. Download the PSID data from <https://doi.org/10.3886/E151641V1> and store them in the folder *01_rawdata/psid*. The folder should contain the following files:
 - *fam1968.zip*
 - *fam1969.zip*
 - ...
 - *fam1993.zip*

- fam1994er.zip
 - fam1995er.zip
 - ...
 - fam2017er.zip
 - ind2017er.zip
 - PEQUIV.zip
2. Download the EU-SILC data and store them in the folder 01_rawdata/silc. The folder should contain the following subdirectories and files:
- AT/2007/UDB_cAT07D.csv
 - AT/2007/UDB_cAT07H.csv
 - AT/2007/UDB_cAT07P.csv
 - AT/2007/UDB_cAT07R.csv
 - ...
 - AT/2015/UDB_cAT15D.csv
 - AT/2015/UDB_cAT15H.csv
 - AT/2015/UDB_cAT15P.csv
 - AT/2015/UDB_cAT15R.csv
 - ...
 - UK/2015/UDB_cUK15D.csv
 - UK/2015/UDB_cUK15H.csv
 - UK/2015/UDB_cUK15P.csv
 - UK/2015/UDB_cUK15R.csv
3. Please open *master.do* and specify the downloaded and unzipped replication package as your working directory. All paths in script files are defined relative to the subfolders in this working directory.
4. Run *master.do* to sequentially execute script files (see description of script and program files above) and to generate results.
5. Figures are stored in directory 04_results/graphs.
6. Tables are stored in directory 04_results/tables.

7. In-text figures can be extracted from the results overview file 04_results/results.dta.

- Open 04_results/results.dta.
- Use identifier variables “country_str” (country acronym), “year” (year), “analysis” (type of analysis), “circset” (set of circumstance variables), “minset” (poverty line) to search for desired result. Make also use of variable labels and the explanatory variables “circumstances”, “efforts”, and “povline” to navigate to your estimate of interest.

8. Examples:

- Extract share of unfair inequality according to baseline specification in the US in 1980 (in-text citation at end of section 1):
`"br n0_m0 if country_str=="US" & year==2010 & analysis==1 & circset==210 & effortset==0 & minset==1"`
- Extract contribution of parental occupation and education to unfair inequality according to baseline specification in the US in 1969 (in-text citation at end of section 4.1):
`"br intergen_r if country_str=="US" & year==1969 & analysis==1 & circset==210 & effortset==0 & minset==1"`
- Extract share of unfair inequality when accounting for preferences in the US in 2014 (in-text citation at end of section 5.1):
`"br env_l_r_eset if country_str=="US" & year==2014 & analysis==4 & circset> ==210 & effortset==1 & minset==1"`
- Extract share of unfair inequality when under the separability assumption in the US in 2014 (in-text citation at end of section 5.3):
`"br n3_m0_r if country_str=="US" & year==2014 & analysis==1 & circset==210 & effortset==0 & minset==1"`

List of tables and programs

The provided code reproduces:

- All numbers provided in text in the paper.
- All tables and figures in the paper.
- All tables and figures in the appendix and supplementary material.

References

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Acknowledgements

This document largely follows the structure suggested in the Readme template of “A template README for social science replication packages” by Lars Vilhuber, Marie Connolly Miklós Koren, Joan Llull and Peter Morrow (<https://doi.org/10.5281/zenodo.4319999>).