



Reforming Land Valuation and Taxation in Ukraine: A path to sustainability and economic fairness

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This review verifies the reproducibility of the exhibits included in the paper " *Reforming Land Valuation and Taxation in Ukraine: A path to sustainability and economic fairness*".

Contents in this review:

1. Main findings
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Main findings

- The code was successfully executed on a new computer following these steps:
 1. First option: Open the R project and run the 15-analysis script chunk by chunk. Render the 20-paper-tables document with the options full_plots and eval_all set to FALSE.
 2. Second option: Update the R script by changing the full_plots and eval_all parameters to TRUE, then re-run the script.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 25 minutes with the full_plots and eval_all options set to FALSE to run; and seven hours when both options are set to TRUE.
- We conducted our reproducibility analysis based on the paper shared by the authors on December 4rd.
- Every exhibit has been reproduced accurately.
- **Note:** All data used in this package is strictly confidential. The authors provided the replicators with intermediate data to reproduce the findings in the paper. This intermediate data is also confidential and is not included in the published package. The code to create this intermediate data from raw data is included in the package (see 10-data-cleaning.qmd); however, this code was not run by the replicators.
- **Reproducibility Summary:**
 - **Data:** All data is restricted and has not been included in the reproducibility package. For more details, please refer to the README file.

- **Code:** All code files (from cleaning to analysis) are included in the reproducibility package.
- **Outputs:** All outputs are generated by code included in the reproducibility package.
- **Reproducibility verification:** Reviewers used data provided directly by the authors to conduct the reproducibility verification, and this is not included in the public reproducibility package. The reviewers did not verify if publicly available data matches the data provided by the authors.
- **Dependencies environment:** The reviewers reproduced an existing environment for dependencies using dependency files or an environment metadata file provided by the authors.

List of exhibits and reproducibility status

Results in the Main Section of the Paper

- **Table 1** Reproduced.
- **Table 2** Reproduced.
- **Table 3** Reproduced. The order of columns (Village and Community) differ in the reproduced output and manuscript, but this does not jeopardize reproducibility.
- **Table 4** Reproduced.
- **Table 5** Reproduced.
- **Figure 1** Reproduced.

Results in the Appendix

- **Figure A1** Reproduced.
- **Figure A2** Reproduced.
- **Figure A3** Reproduced.
- **Figure A4** Reproduced. To successfully reproduce this figure the options *full_plots* and *eval_all* in the main do file were set to TRUE. This process takes about seven hours.
- **Figure A5** Reproduced. To successfully reproduce this figure the options *full_plots* and *eval_all* in the main do file were set to TRUE. This process takes about seven hours.
- **Figure A6** Reproduced.
- **Figure A7** Reproduced.
- **Figure A8** Reproduced.
- **Figure A9** Reproduced.
- **Figure A10** Reproduced.
- **Table A1** Reproduced.
- **Table A2** Reproduced.
- **Table A3** Reproduced.

Reproduction Environment

- Paper exhibits were reproduced in a computer with the following specifications:
 - OS: Windows 11 Enterprise
 - Processor: Intel(R) Core(TM) i5-1145G7 CPU @ 2.60GHz
 - Memory available: 15.7 GB
 - Software version: R version 4.4.1