



# Reproducible Research Repository

## *Poverty Prosperity and Planet Report 2024*

*Third Submission: FR\_WLD\_2024\_198*

*Ankriti Singh*

*reproducibility@worldbank.org*

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This review verifies the reproducibility of the exhibits included in the paper “*Poverty Prosperity and Planet Report 2024*”.

### **Contents in this review:**

1. Main findings
2. List of exhibits and reproducibility status
3. Reproduction Environment

### *Main findings*

- The code was successfully executed on a new computer after:
  1. By updating the file path in the main do-file.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 50 minutes to run.
- We conducted our reproducibility analysis based on the report (212123\_Consolidated.pdf) shared by the authors on October 11, 2024.
- Not all exhibits reproduced successfully. Approximately 10 exhibits failed to reproduce. Please refer to Section 3 for further details.
- The published package contains two running options:
  1. **All Users:** The version present in the repository runs using the processed data, which is available to all users. The code required to run the internal version using raw data is also included but is commented out.
  2. **Internal World Bank Users:** An internal-only version that runs using raw data will be made available at a later date through the Development Data Hub.
- **Reproducibility Summary:**
  - **Data:** Some 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:** Some outputs are not generated by code (created manually in Excel) but instructions for producing these outputs are included in the README file.
- **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 created a new environment for dependencies using the latest versions available for each dependency at the moment of the review.

### *List of exhibits and reproducibility status*

The figures tagged in lime green were created in Excel using the code-generated data, with formatting that differs slightly from the versions presented in the paper.

The figures marked in dark green were generated by code, with formatting that differs slightly from the versions presented in the paper.

Addendum (December 17, 2024): Figures O.2a,b and 1.3a,b have been updated due to corrections in the underlying data. While the earlier version of the data contained inaccuracies, the resulting changes in the figures are minimal, with the largest difference being 0.2 in the "Observed" lines. The report still contains the previous versions of the figures; however, the reproducibility package has been updated with the corrected data and outputs.

### **Results in the Main Messages**

- Figure 1a Reproduced.
- Figure 1b Reproduced.
- Figure 2a Reproduced.
- Figure 2b Reproduced.
- Figure 3a Reproduced.
- Figure 3b Reproduced.
- Figure 4 Reproduced.

### **Results in the Overview**

- Figure O.1a,b Reproduced.
- Figure O.2a Reproduced.
- Figure O.2b Reproduced.
- Figure O.3a Reproduced.
- Figure O.3b Reproduced.

- **Figure O.4a** Reproduced.
- **Figure O.4b** Reproduced.
- **Figure O.5** Reproduced.
- **Map O.1** All values Reproduced. The numbers from the code output were verified against numbers in map1 sheet in overview.xlsx.
- **Figure O.6a** Reproduced.
- **Figure O.6b** Reproduced.
- **Figure O.7a** Reproduced.
- **Figure O.7b** Reproduced.
- **Map O.2** All values Reproduced. The numbers from the code output were verified against numbers in map2 sheet in overview.xlsx.
- **Figure O.8** Reproduced.
- **Figure O.9a** Reproduced.
- **Figure O.9b** Reproduced.
- **Figure O.10** Reproduced.
- **Figure O.11a,b** Reproduced.
- **Figure O.12** Reproduced.
- **Figure O.13** Reproduced.
- **Figure O.14a** Reproduced.
- **Figure O.14b** Reproduced.
- **Figure O.15a** Reproduced.
- **Figure O.15b** Reproduced.
- **Figure O.15c** Reproduced.

#### Results in the Chapter 1

- **Figure 1.1a,b** Reproduced.
- **Figure B1.1.1a,b** Reproduced.
- **Figure B1.2.1a** Reproduced.
- **Figure B1.2.1b** Reproduced.
- **Figure 1.2a** Reproduced.

- **Figure 1.2b** Reproduced.
- **Figure 1.3a** Reproduced.
- **Figure 1.3b** Reproduced.
- **Figure 1.4a** Reproduced.
- **Figure 1.4b** Reproduced.
- **Figure 1.4c** Reproduced.
- **Figure 1.5a** Reproduced.
- **Figure 1.5b** Reproduced.
- **Figure 1.6a** Reproduced.
- **Figure 1.6b** Reproduced.
- **Figure 1.7a** Reproduced.
- **Figure 1.7b** Reproduced.
- **Figure 1.7c** Reproduced.
- **Figure 1.7d** Reproduced.
- **Figure 1.8** Reproduced.
- **Figure B1.4.1** Reproduced.
- **Figure B1.4.2** Reproduced.
- **Figure 1.9a** Reproduced.
- **Figure 1.9b** Reproduced.
- **Figure 1.10a** Reproduced.
- **Figure 1.10b** Reproduced.
- **Figure 1.10c** Reproduced.
- **Figure 1.10d** Reproduced.
- **Figure 1.11** Reproduced. There may be slight variations depending on the revision of Stata 18.
- **Figure 1.12a** Reproduced.
- **Figure 1.12b** Reproduced.
- **Figure 1.13a** Reproduced.
- **Figure 1.13b** Reproduced.

- **Figure 1.14** Reproduced.
- **Figure 1.15** Reproduced.
- **Figure 1B1** Reproduced.
- **Figure 1C1** Reproduced.
- **Table 1.1** Reproduced.
- **Table 1.1D1** Reproduced.
- **Table 1.1D2** Reproduced.
- **Table 1.1D3** Reproduced.

## Results in the Chapter 2

- **Figure 2.1a** Reproduced.
- **Figure 2.1b** Reproduced.
- **Figure 2.2** Reproduced. The Excel figure does not include the category "World" but the values were checked and they match.
- **Figure 2.3** Reproduced.
- **Figure 2.4a** Reproduced.
- **Figure 2.4b** Reproduced.
- **Figure 2.5** Reproduced.
- **Figure 2.6** Reproduced.
- **Figure 2.7** Reproduced.
- **Map 2.1** All values Reproduced. The numbers from the code output were verified against numbers in map1 sheet in Chapter2.xlsx.
- **Figure 2.8** Reproduced.
- **Figure 2.9a** Reproduced.
- **Figure 2.9b** Reproduced.
- **Figure 2.10** Reproduced.
- **Figure 2.11** Reproduced.
- **Figure 2.12** Reproduced.
- **Figure 2.13** Reproduced.
- **Figure 2.14** Reproduced.

- Figure 2.15 Reproduced.
- Figure 2A.1a Reproduced.
- Figure 2A.1b Reproduced.
- Figure 2C.1 Reproduced.
- Figure 2D.1 Reproduced.
- Figure 2F.1 Reproduced.
- Table 2.1 Reproduced.
- Table 2D.1 Reproduced.
- Table 2E.1 Reproduced.
- Table 2F.1 Reproduced.

### Results in the Chapter 3

- Figure 3.1 Does not apply.
- Figure 3.2 Does not apply.
- Figure 3.3 Reproduced.
- Map 3.1 All values Reproduced. Numbers from the code output were verified against numbers in respective Excel sheet.
- Figure 3.4 Reproduced.
- Figure B3.2.1a Reproduced.
- Figure B3.2.1b Reproduced.
- Figure 3.5 Reproduced.
- Figure 3.6a Reproduced.
- Figure 3.6b Reproduced.
- Figure 3.6c Reproduced.
- Figure 3.6d Reproduced.
- Figure 3.7 Reproduced.
- Figure 3.8a Reproduced.
- Figure 3.8b Reproduced.
- Figure 3.9a Reproduced.

- Figure 3.9b Reproduced.
- Figure 3.10 Reproduced.
- Figure 3.11a Reproduced.
- Figure 3.11b Reproduced.
- Figure 3.12a Reproduced.
- Figure 3.12b Reproduced.
- Figure 3.12c Reproduced.
- Figure 3.13a Reproduced.
- Figure 3.13b Reproduced.
- Figure 3.13c Reproduced.
- Figure 3.13d Reproduced.
- Figure 3.14 Reproduced.
- Figure 3.15a Reproduced.
- Figure 3.15b Reproduced.
- Figure 3A.1a Reproduced.
- Figure 3A.1b Reproduced.
- Figure 3A.1c Reproduced.
- Figure 3C.1a Reproduced.
- Figure 3C.1b Reproduced.
- Figure 3D.1 Reproduced.

#### Results in the Chapter 4

- Figure 4.1 Reproduced.
- Figure 4.2 Reproduced.
- Figure 4.3a Reproduced.
- Figure 4.3b Reproduced.
- Figure 4.4a Reproduced.
- Figure 4.4b Reproduced.
- Figure 4.5a Reproduced.

- **Figure 4.5b Reproduced.** The value for Bulgaria in 1992 appears to be slightly above 25 in the report, whereas the code output shows it as exactly 25.
- **Figure 4.6 Reproduced.**
- **Figure 4.7 Reproduced.**

### *Reproduction Environment*

- Paper exhibits were reproduced in a computer with the following specifications:
  - OS: Windows 10 Enterprise
  - Processor: Intel(R) Xeon(R) Gold 6226R CPU @ 2.90GHz 2.90 GHz (2 processors)
  - Memory available: 32 GB
  - Software version: Stata version 18 MP