



Impact of temperature uncertainty on firm growth: A grid-level analysis

Second Submission: RR_WLD_2024_228

Xuerong Lei, Maria Reyes Retana

reproducibility@worldbank.org

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This review verifies the reproducibility of the exhibits included in the paper "*Impact of temperature uncertainty on firm growth: A grid-level analysis*".

Contents in this review:

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Main findings

- The code was successfully executed on a new computer after:
 1. Open the R project and run the Analysis code.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 2 hours to run.
- We conducted our reproducibility analysis based on the paper shared by the authors on December 4rd.
- The code contains three main parts: 1. Processing of weather data. 2. Processing of restricted firm-level Orbis data. 3. Analysis. Replicators were able to run and verify Parts 1 and 3 using the intermediate aggregated data provided by the authors, but Part 2 was not run due to data restrictions. The published package only allows for running Part 1, as due to data restrictions Part 2 and 3 cannot be executed.
- Every exhibit has been reproduced accurately (part 3 of the code).
- **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:** 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 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

Results in the Main Section of the Paper

- **Figure 1** Reproduced.
- **Figure 2** Reproduced.
- **Figure 3** Reproduced.
- **Table 1** Reproduced.
- **Table 2** Reproduced.
- **Table 3** Reproduced.
- **Table 4** Reproduced.
- **Table 5** Reproduced.

Results in the Annex

- **Figure 5** Reproduced.
- **Figure 6** Reproduced.
- **Figure 7** Reproduced.
- **Figure 8** Reproduced.
- **Figure 4** Does not apply: the exhibit does not show data analysis results.
- **Figure 5** Reproduced.
- **Figure 6** Reproduced.
- **Figure 7** Reproduced.
- **Figure 8** Reproduced.
- **Table 6** Does not apply: the exhibit does not show data analysis results.
- **Table 7** Reproduced.
- **Table 8** 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, 2900 Mhz, 16 Core(s), 16 Logical Processor(s)
 - Memory available: 15.7 GB
 - Software version: R version 4.4.1