



Fiscal Multipliers in Resource-Rich Economies: Evidence from the Gulf Countries

Second Submission: RR_ASI_2025_413

Maria Reyes Retana, Anya Pilipentseva

reproducibility@worldbank.org

September 17, 2025

This review verifies the reproducibility of the exhibits included in the paper “*Fiscal Multipliers in Resource-Rich Economies: Evidence from the Gulf Countries*”.

Contents in this review:

1. Main findings
2. List of exhibits and reproducibility status
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Main findings

- **Every exhibit has been reproduced accurately.**
- The code was successfully executed on a new computer after:
 1. Changing the path in the *master_FM_do*, *plots_main*, *plots_appendix*, *gcc_specific_plots*, files and running the scripts.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 5 hours to run.
- We conducted our reproducibility analysis based on the published paper available here
- **Verification Process and Data Handling:**
 - The reproducibility package relies on three types of data: open, restricted and accessible data.
 - Open data is included in the public reproducibility package.
 - Reviewers used data provided directly by the authors to conduct the reproducibility verification, and two of the sources is not included in the public reproducibility package, as it does not allow redistribution.
 - *data_hash_report.csv* lists the SHA256 hashes of all files in the Data folder to support data integrity checks. Users who acquire the accessible/restricted data can use this file to verify that the data has not been altered.
- **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.
- **Dependencies environment:** The reviewers created a new environment using the latest versions of dependencies available at the moment of the review.

List of exhibits and reproducibility status

Results in the Main Section of the Paper

- **Figure 1** Reproduced with minor differences. Verified against LP_Ramey_FMEstimates_g_ByCountry_longdiff
The axes differ slightly between the figure produced by the code and the ones in the paper. In the paper, the six countries included share the same axis, while the figure generated by the code uses free axes. In addition, Qatar and Saudi Arabia appear in different position. However, the numerical values match clearly, so this figure is considered reproducible.
- **Figure 2** Reproduced. Verified against LP_Ramey_FMEstimates_t_ByCountry_longdiff
- **Figure 3** Reproduced. Verified against LP_Ramey_FMEstimates_Panel_longdiff
- **Figure 4** Reproduced. Verified against StateDep_FM_Plot.

Results in the Annex

- **Table A.1** Reproduced. Reviewed against LP_Ramey_FMEstimates_t_longdiff
- **Table A.2** Reproduced. Verified against LP_Ramey_FMEstimates_panel_longdiff
- **Table A.3** Does not show analysis results.
- **Figure B.1** Reproduced. Verified against Average_FMs
- **Figure B.2** Reproduced. Verified against Multiplier_histograms_subset
- **Figure B.3** Results reproduced, but table or figure includes manual changes from code output Verified against Multiplier_histograms_SVAR_vs_LP. The order of the countries shown differs from the paper, but this does not affect reproducibility, as the figures match.
Additionally, extra figures are produced during the reproduction process that are not included in the paper. Since all figures shown in the paper are generated by the code, this does not affect reproducibility.
- **Figure B.4** Reproduced. Verified against LP_Ramey_AllFMEstimates_longdiff
- **Figure C.1** Reproduced. Verified against govbudget_decomp.pdf
- **Figure C.2** Reproduced. Verified against Oman_budget.pdf

- **Table D.1 Reproduced.** Verified against `first_stage_results_G`
- **Table D.2 Reproduced.** Verified against `first_stage_results_panel`.

The column names in columns 2 and 3 of the .tex file differ from those in the paper. In the paper, these columns are labeled "Current Exp" and "Capital Exp", while in the .tex file they are labeled "Spending" and "Investment".

Reproduction Environment

Paper exhibits were reproduced on a computer with the following specifications:

- OS: Windows 11 Enterprise
- Processor: Processor INTEL(R) XEON(R) PLATINUM 8562Y+, 2800 Mhz, 16 Core(s), 16 Logical Processor(s)
- Memory available: 87 GB
- Software version: Stata 18.5 MP