

Replication file for "Are Regional Fiscal Multipliers on EU Structural and Investment Fund Spending Large? A Reassessment of the Evidence" By Federico Fiuratti, Desislava Nikolova, Steven Pennings and Marc Schiffbauer
Published in the *Journal of Macroeconomics* (September 2025)
<https://www.sciencedirect.com/science/article/pii/S0164070425000291>

This folder contains the files to replicate the results in the main text of Fiuratti et al (2025) (Tables 1-6 and Figure 1). The Raw Data that has been used is contained in the "RawData" folder, except ICRG.xlsx which is proprietary, but which is only used in Table 6 (see below). Two columns in Table 6 in the replication file differ very slightly from the published version, as discussed at the end of this readme file.

Directions: Edit the location of this folder directory in line 6 of Master.do in Stata, then run Master.do. This do file runs do files contained in "DoFiles" folder that clean all the data from "RawData" folder, save intermediate files in /StataData/ and produce tables in /Tables/. MainTables.xlsx links to the relevant files in /Tables/. It also produces Figure1.png will be saved in the "Figures" folder.

Software requirements: Stata (should run in version 13 and above), with two extra packages `outreg2` and `xtivreg2` which can be installed by typing `"findit outreg2"` and `"findit xtivreg2"` in the Stata command prompt.

Excluded proprietary data (for Table 6). The excluded proprietary data ICRG.xlsx is needed to produce several columns of Table 6. The code in this replication file is written assuming the user *does* have ICRG.xlsx and it is located in the Raw folder. If the user *does not* have access to ICRG.xlsx follow these 3 steps: (1) In line 450 of \DoFiles\GeneralData.do replace the "1" with a "2"; (2) in line 20 of \DoFiles\Table6.do, replace the "1" with a "2"; (3) Run Master.do. These steps will automatically skip those parts of the code requiring ICRG.xlsx, and only report the unformatted results in the last column of Table 6 in the Stata console (which don't require ICRG.xlsx)

Description of Raw data files (in /RawData" folder):

"GDP_Components.xlsx" contains country level total expenditure, government expenditure, private expenditure and external balance data, all from Eurostat.

"NUTS2_border.xlsx" contains a database with neighboring regions for each NUTS2 region. The dataset was generated using R version 4.3 on Windows using the code "code_NUTS.R". This code, and the data files it calls, are in the NUTS2_Border folder. To run code_NUTS.R the user needs to (i) update the directory of the replication folder in line 30 of code_NUTS.R and (ii) make sure that the packages "openxlsx", "proxy", "sf" and "readxl" are installed (uncomment lines 18-21). The R code calls two other data files, which are included in the NUTS2_Border folder.

"NUTS_RG_20M_2021_3035.shp" (downloaded 22-05-2023 from <https://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/administrative-units-statistical-units/nuts>) is a shapefile, which contains geospatial vector data related to the NUTS regions. (ii) "NUTS2021cleaned.xlsx" is a cleaned version of "NUTS2021.xlsx" (downloaded 02-09-2023 from <https://ec.europa.eu/eurostat/documents/345175/629341/NUTS2021.xlsx>) which contains NUTS codes per region. The cleaning involves three steps. First, start with the sheet "NUTS & SR 2021" (unchanged in the workbook) and remove excess regions so there are the official number of NUTS2 regions (242) and save this as sheet "N2only" (saved in the same workbook). Second, remove extra regions from "N2only" to generate sheet "N2only_noex". Finally, remove regions in the UK to generate the sheet "N2only_noexUK" which is called in R code.

"Investment_byNUTS2.xlsx" (downloaded 19-10-2022 from https://ec.europa.eu/eurostat/databrowser/product/page/NAMA_10R_2GFCF) contains Gross fixed capital formation by NUTS2 regions (and also at country level)

"GDP_byNUTS2.xlsx" (downloaded 19-10-2022 from https://ec.europa.eu/eurostat/databrowser/product/page/NAMA_10R_2GDP) contains Gross domestic product (GDP) at current market prices by NUTS2 regions (and also at country level).

"nama_10_gdp__custom_3592126_spreadsheet.xlsx" (downloaded 14-10-2022 from https://ec.europa.eu/eurostat/databrowser/product/page/NAMA_10_GDP__custom_3592126) contains (among other data), GDP and GDP deflator data at country level.

"Historic_EU_payments_-_regionalised_and_modelled.csv" (downloaded 09-09-2021 from <https://cohesiondata.ec.europa.eu/Other/Historic-EU-payments-regionalised-and-modelled/tc55-7ysv>) contains Historic EU Payments data - regionalized and modeled

"Int_Consumption_regional.dta" and "Data.dta" contains NUTS2 non-market GVA + intermediate consumption (current euros) used as a proxy for government spending; downloaded from Gabriel et al. (2023) JEEA replication archive (see <https://doi.org/10.1093/jeea/jvad006>)

"ICRG.xlsx" [not included] (International Country Risk Guide) contains proprietary ICRG country-year data on Rule of Law (RL), Government Effectiveness (GE), Control of Corruption (CC), Regulatory Quality (RQ) indicators (downloaded Oct-28-2021 from the World Bank Library Subscription) which are used to build the institutional index control (Table 6). A license can be obtained from PRS group: <https://www.prsgroup.com/explore-our-products/icrg/> This ICRG.xlsx file is formed by (i) downloading the monthly Country Data for all years to 2018 for Law & Order (L), Bureaucracy Quality (L), Corruption (F), Investment Profile (C), which correspond to Rule of Law (RL), Government Effectiveness (GE), Control of Corruption (CC), Regulatory Quality (RQ) indicators (by another name) from website: <https://epub-prsgroup-com.eu1.proxy.openathens.net/customer/countrydata/> (ii) taking the annual average, (iii) reorganizing the tabs so they are named RQ, GE, RL, CC.

Other notes: The do file "Mergingcorrection.do" (called by GeneralData.do) contains a number of manual adjustments to the NUTS2 region codes to account for changing NUTS2 definitions/codes over time, and to make sure they are consistent with the payments data. The "PreviousNUTS2 folder" contains source information for these adjustments. The adjustments can be downloaded from: <https://ec.europa.eu/eurostat/web/nuts/history> and contains adjustment for: NUTS 2016 - NUTS 2021, NUTS 2013 - NUTS 2016, NUTS 2010 - NUTS 2013, NUTS 2006 - NUTS 2010, NUTS 2003 - NUTS 2006, LOCOS 1999 - LOCOS 2003.

Corrigendum: The calculations in the original version of the paper included a processing error in ICRG.xlsx where the GE tab contained RQ data (the rest of the ICRG.xlsx was correct). This resulted in small errors in column 2 and column 3 of Table 6 (all other columns and tables are correct). Note that the errors do not affect the size, significance or interpretation of the results. The differences are summarized below, and the corrected results are included in MainTables.xlsx of this replication file.

Table 6	Original Published Version		Corrected (included in MainTables.xlsx)	
	2. Our replication	3. Replication Including 2009	2. Our replication	3. Replication Including 2009
All Europe sample				
2009 incl: Specification	No	Yes	No	Yes
Panel A: GDP Impact Multipliers				
2SLS	1.26*** (0.29)	0.79** (0.31)	1.25*** (0.29)	0.78** (0.31)
OLS	0.87*** (0.20)	0.08 (0.47)	0.94*** (0.20)	0.17 (0.42)
Obs	517	517	516	516
Panel B: Investment Impact Multipliers				
2SLS	1.50*** (0.31)	1.17*** (0.33)	1.57*** (0.32)	1.19*** (0.32)
OLS	1.22*** (0.20)	0.57 (0.39)	1.22*** (0.20)	0.57 (0.39)
Obs	453	453	452	452