UROOT: Conduct unit root tests using EViews routines

Saturday: August 26, 2023

# UROOT: A Seamless Integration of EViews and R

# Saturday: August 26, 2023

# 1 About the Author

The author of this package, **Sagiru Mati**, obtained his PhD in Economics from the Near East University, North Cyprus. He works at the Department of Economics, Yusuf Maitama Sule (Northwest) University, Kano, Nigeria. Please visit his [website](https://smati.com.ng) for more details.

Please follow his publications on [**ORCID: 0000-0003-1413-3974**](https://orcid.org/0000-0003-1413-3974)

# 2 About UROOT

UROOT is an R package that can run EViews program in R. It also adds eviews as a knit-engine to knitr package, so that users can embed EViews codes in R Markdown and Quarto document.

# 3 Why UROOT?

While the ecosystem of R is great, it cannot run EViews codes, not talk of handling EViews objects dynamically and reproducibly. Even though, EViews can communicate with R, users still need to switch to type-setting application to embed the EViews outputs. Specifically:

* I wish I could embed EViews codes in R Markdown or Quarto document
* I wish I could dynamically import the EViews outputs (graphs, tables, equation and series) individually or at once into R, R Markdown or Quarto document without switching between these applications back and forth.
* I wish I could use an R function in R, R Markdown or Quarto to:
  + graph EViews series objects.
  + graph an R dataframe using EViews.
  + import data from external sources such as csv, xlsx as a new EViews workfile or into an existing workfile.
  + create an EViews workfile from an R dataframe
  + save an EViews workfile page as a workfile or another file format.
  + execute EViews codes.
  + export an R dataframe as a new EViews workfile or to an existing EViews workfile.
  + save an EViews workfile as a workfile or another file format.
  + import EViews table object as kable.
  + import EViews series objects as a dataframe or xts object
  + import equation data members such as coefficients, standard errors, and so on.
  + import EViews graph objects
  + import equation data members, graph, series and table objects all at once.
  + simulate a random walk process using EViews.
* I wish I could do all of the above without opening the EViews!!!

# 4 Installation

UROOT can be installed using the following commands in R.

install.packages("UROOT")  
OR  
devtools::install\_github("sagirumati/UROOT")

# 5 Setup

To run the package successfully, you need to do one of the following

* Don’t do anything if the name of EViews executable is one of the following: EViews13\_x64, EViews13\_x86, EViews12\_x64, EViews12\_x86, EViews11\_x64, EViews11\_x86, EViews10\_x64, EViews10\_x86, EViews9\_x64, EViews9\_x86, EViews10. The package will find the executable automatically.
* Rename the Eviews executable to eviews or one of the names above.
* Alternatively, you can use set\_eviews\_path() function to set the path the EViews executable as follows:

set\_eviews\_path("C:/Program Files (x86)/EViews 10/EViews10.exe")

# 6 Usage

Please load the UROOT package as follows:

```{r} .  
library(UROOT)  
```

# 7 Ways to use UROOT

The package can work with base R, R Markdown or Quarto document.

## 7.1 UROOT along with R Markdown or Quarto document

After loading the package, a chunk for Eviews can be created by supplying eviews as the engine name in R Markdown or Quarto document as shown below :

Table: Table 7.1: sagiru mati Variables None Constant Constant and trend None Constant Constant and trend Decision ———- ——- ——— ——————- ———– ———– ——————- ——— X -9.377 -9.326 -9.481 -13.448\*\*\* -13.393\*\*\* -13.317\*\*\* Y -0.668 -2.703 -2.661 -9.742\*\*\* -9.684\*\*\* -9.760\*\*\* I(1) Table: (#tab:UROOT)sagiru mati Variables None Constant Constant and trend None Constant Constant and trend Decision ———- ——- ——— ——————- ———– ———– ——————- ——— X -9.371 -9.32 -9.475 -35.873\*\*\* -36.762\*\*\* -37.059\*\*\* NA Y -0.693 -2.93 -2.850 -9.742\*\*\* -9.682\*\*\* -9.763\*\*\* NA

Table 7.3: ADF test

| Variables | None | Constant | Constant and trend | None | Constant | Constant and trend | Decision |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | -9.377 | -9.326 | -9.481 | -13.448\*\*\* | -13.393\*\*\* | -13.317\*\*\* |  |
| Y | -0.668 | -2.703 | -2.661 | -9.742\*\*\* | -9.684\*\*\* | -9.760\*\*\* | I(1) |

Table 7.4: PP test

| Variables | None | Constant | Constant and trend | None | Constant | Constant and trend | Decision |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | -9.371 | -9.32 | -9.475 | -35.873\*\*\* | -36.762\*\*\* | -37.059\*\*\* | NA |
| Y | -0.693 | -2.93 | -2.850 | -9.742\*\*\* | -9.682\*\*\* | -9.763\*\*\* | NA |