UROOT: Conduct unit root tests using EViews routines

Saturday: August 26, 2023

Contents

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 for more details.

Please follow his publications on **ORCID: 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, R^2 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 1: sagiru mati

Variables	None	Constant	Constant and trend	None	Constant	Constant and trend	Decision
X	-10.081	-10.221	-10.522	-8.239***	-8.210***	-8.168***	
Y	0.384	-2.068	-1.118	-10.209***	-10.322***	-10.561***	I(1)

Table 2: sagiru mati

Variables	None	Constant	Constant and trend	None	Constant	Constant and trend	Decision
X	-10.099	-10.279	-11.021	-48.406***	-51.473***	-51.090***	
Y	0.491	-2.174	-0.692	-10.217***	-10.378***	-10.937***	I(1)

Table 3: ADF test

Variables	None	Constant	Constant and trend	None	Constant	Constant and trend	Decision
X	-10.081	-10.221	-10.522	-8.239***	-8.210***	-8.168***	
Y	0.384	-2.068	-1.118	-10.209***	-10.322***	-10.561***	I(1)

Table 4: PP test

Variables	None	Constant	Constant and trend	None	Constant	Constant and trend	Decision
X	-10.099	-10.279	-11.021	-48.406***	-51.473***	-51.090***	
Y	0.491	-2.174	-0.692	-10.217***	-10.378***	-10.937***	I(1)