

## Unit Root Test Ver.1

### Documentation File

Peace be upon you

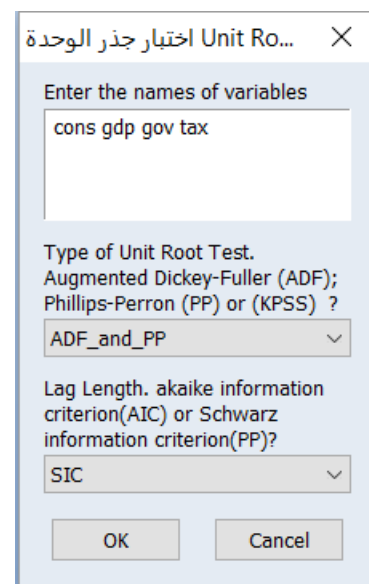
I present to you this version of the "Unit Root Test Ver.1" to tests the stability of the time series and unit root tests. It is software provides an exceptional effort had to be done to make these tests, especially for the case of a large number of them.

This software allows for ADF; PP and Kpss test. It can deal with a number exceeds 1500 variables.

### Installing software

So that the software is set up, you must follow these steps:

- 1- open the file "urallinstaller1";
- 2- Run the program from the Run option at the top and the far right of the code window;
- 3- Close the software and open any Eviews database;
- 4- Go to the Add-in list you will find the "Unit Root Test ver.1" option on first list;
- 5- Select the test and start work.



### How the software works.

The software is very easy.

1. Enter the variables that you want to test its stability, add a space between each of them;
2. You can select the type of test that you want to be implemented among the three options can be selected or ADF&PP for options ADF\_and\_PP.
3. Must choose a criterion that is determine the maximum number of lags in equations for estimating tests, SIC or AIC, as in the picture bellow.

After pressing the "OK" button, we will get the test results table as in the pictures.

UNIT ROOT TEST TABLE (PP)

|                          | <u>At Level</u> | CONS          | GDP           | GOV           | TAX           |
|--------------------------|-----------------|---------------|---------------|---------------|---------------|
| With Constant            | t-Statistic     | 1.1132        | -0.2987       | 0.5482        | 0.4885        |
|                          | Prob.           | <b>0.9975</b> | <b>0.9211</b> | <b>0.9878</b> | <b>0.9859</b> |
|                          |                 | n0            | n0            | n0            | n0            |
| With Constant & Trend    | t-Statistic     | -4.2267       | -9.1327       | -8.2474       | -4.1742       |
|                          | Prob.           | <b>0.0052</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0062</b> |
|                          |                 | ***           | ***           | ***           | ***           |
| Without Constant & Trend | t-Statistic     | 5.5705        | 4.3599        | 8.4234        | 3.7669        |
|                          | Prob.           | <b>1.0000</b> | <b>1.0000</b> | <b>1.0000</b> | <b>1.0000</b> |
|                          |                 | n0            | n0            | n0            | n0            |

At First Difference

|                          | d(CONS)              | d(GDP)   | d(GOV)   | d(TAX)   |
|--------------------------|----------------------|----------|----------|----------|
| With Constant            | t-Statistic -28.1350 | -29.7046 | -27.7364 | -31.2515 |
|                          | Prob. 0.0000         | 0.0001   | 0.0000   | 0.0001   |
|                          | ***                  | ***      | ***      | ***      |
| With Constant & Trend    | t-Statistic -36.7185 | -29.5375 | -28.3409 | -33.8723 |
|                          | Prob. 0.0001         | 0.0001   | 0.0001   | 0.0001   |
|                          | ***                  | ***      | ***      | ***      |
| Without Constant & Trend | t-Statistic -19.5720 | -18.0269 | -15.5537 | -23.4950 |
|                          | Prob. 0.0000         | 0.0000   | 0.0000   | 0.0000   |
|                          | ***                  | ***      | ***      | ***      |

UNIT ROOT TEST TABLE (ADF)

|                          | <u>At Level</u> | CONS          | GDP           | GOV           | TAX           |
|--------------------------|-----------------|---------------|---------------|---------------|---------------|
| With Constant            | t-Statistic     | 1.5015        | -0.5088       | 0.7202        | 0.9208        |
|                          | Prob.           | <b>0.9993</b> | <b>0.8849</b> | <b>0.9923</b> | <b>0.9956</b> |
|                          |                 | n0            | n0            | n0            | n0            |
| With Constant & Trend    | t-Statistic     | -1.7442       | -2.3587       | -2.6285       | -1.6717       |
|                          | Prob.           | <b>0.7264</b> | <b>0.3995</b> | <b>0.2693</b> | <b>0.7590</b> |
|                          |                 | n0            | n0            | n0            | n0            |
| Without Constant & Trend | t-Statistic     | 2.9659        | 2.6215        | 4.3229        | 3.2785        |
|                          | Prob.           | <b>0.9993</b> | <b>0.9979</b> | <b>1.0000</b> | <b>0.9997</b> |
|                          |                 | n0            | n0            | n0            | n0            |

At First Difference

|                          | t-Statistic | d(CONS)       | d(GDP)        | d(GOV)        | d(TAX)        |
|--------------------------|-------------|---------------|---------------|---------------|---------------|
| With Constant            | t-Statistic | -3.0286       | -3.5544       | -5.3844       | -5.5715       |
|                          | Prob.       | <b>0.0346</b> | <b>0.0079</b> | <b>0.0000</b> | <b>0.0000</b> |
|                          |             | **            | ***           | ***           | ***           |
| With Constant & Trend    | t-Statistic | -5.6097       | -3.5497       | -5.4598       | -5.7859       |
|                          | Prob.       | <b>0.0000</b> | <b>0.0381</b> | <b>0.0001</b> | <b>0.0000</b> |
|                          |             | ***           | **            | ***           | ***           |
| Without Constant & Trend | t-Statistic | -1.6279       | -1.6529       | -2.5151       | -3.4072       |
|                          | Prob.       | <b>0.0975</b> | <b>0.0928</b> | <b>0.0120</b> | <b>0.0008</b> |
|                          |             | *             | *             | **            | ***           |

|                          |             |               |               |               |               |
|--------------------------|-------------|---------------|---------------|---------------|---------------|
|                          | Prob.       | <b>0.0346</b> | <b>0.0079</b> | <b>0.0000</b> | <b>0.0000</b> |
|                          |             | **            | ***           | ***           | ***           |
| With Constant & Trend    | t-Statistic | -5.6097       | -3.5497       | -5.4598       | -5.7859       |
|                          | Prob.       | <b>0.0000</b> | <b>0.0381</b> | <b>0.0001</b> | <b>0.0000</b> |
|                          |             | ***           | **            | ***           | ***           |
| Without Constant & Trend | t-Statistic | -1.6279       | -1.6529       | -2.5151       | -3.4072       |
|                          | Prob.       | <b>0.0975</b> | <b>0.0928</b> | <b>0.0120</b> | <b>0.0008</b> |
|                          |             | *             | *             | **            | ***           |

Notes: (\*)Significant at the 10%; (\*\*)Significant at the 5%; (\*\*\*) Significant at the 1%. and (no) Not Significant  
\*MacKinnon (1996) one-sided p-values.

This Result is The Out-Put of Program Has Developed By:

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Results will vary for the KPSS test. It will be as in bellow:

**UNIT ROOT TEST RESULTS TABLE (KPSS)**

Null Hypothesis: the variable is stationary

|                          |                      | <u>At Level</u>            |               |               |               |
|--------------------------|----------------------|----------------------------|---------------|---------------|---------------|
|                          |                      | CONS                       | GDP           | GOV           | TAX           |
| With Constant            | t-Statistic<br>Prob. | 1.4331<br>***              | 1.4861<br>*** | 1.4881<br>*** | 1.4095<br>*** |
| With Constant & Trend    | t-Statistic<br>Prob. | 0.3594<br>***              | 0.1485<br>**  | 0.2072<br>**  | 0.3226<br>*** |
| Without Constant & Trend | t-Statistic<br>Prob. | =====                      | =====         | =====         | =====         |
|                          |                      | <u>At First Difference</u> |               |               |               |
|                          |                      | d(CONS)                    | d(GDP)        | d(GOV)        | d(TAX)        |
| With Constant            | t-Statistic<br>Prob. | 0.3707<br>*                | 0.0563<br>n0  | 0.1404<br>n0  | 0.2362<br>n0  |
| With Constant & Trend    | t-Statistic<br>Prob. | 0.0517<br>n0               | 0.0549<br>n0  | 0.0679<br>n0  | 0.0538<br>n0  |
| Without Constant & Trend | t-Statistic<br>Prob. | =====                      | =====         | =====         | =====         |

**Notes:**

a: (\*)Significant at the 10%; (\*\*)Significant at the 5%; (\*\*\*) Significant at the 1% and (no) Not Significant

b: Lag Length based on SIC

c: Probability based on Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

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