

# The uroot Package

## The uroot and partsm R-Packages: *Some Functionalities for Time Series Analysis*

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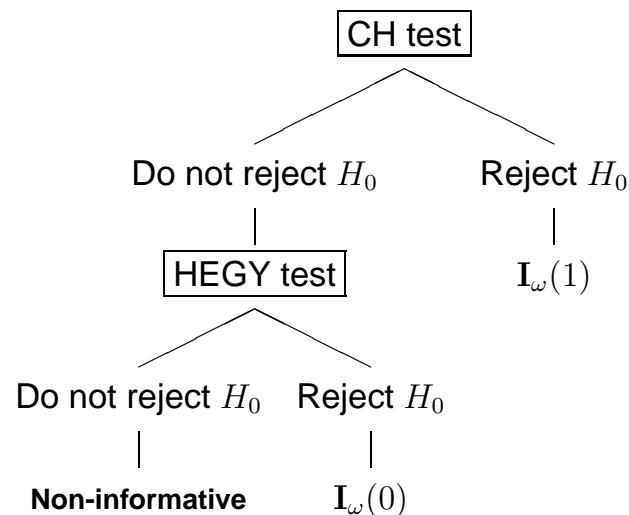
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- F. Canova and B.E. Hansen (1995), Are seasonal patterns constant over time? A test for seasonal stability. *Journal of Business and Economic Statistics*, 13.

# CH-HEGY Sequence of Tests



# A Tree Widget



A **root node** is created when a time series is loaded. Transformations of the data (logarithms, first differences, subsamples,...) can be added to the tree as a **child node**. The nodes in the tree can be **drilled-down** or **drilled-up** and removed from the tree.

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$$y_t = \phi_{1s}y_{t-1} + \dots + \phi_{ps}y_{t-p} + \epsilon_t, \quad \epsilon_t \sim iid(0, \sigma_\epsilon^2),$$

for  $t = 1, 2, \dots, n$  and being  $s = 1, \dots, S$  the seasons.

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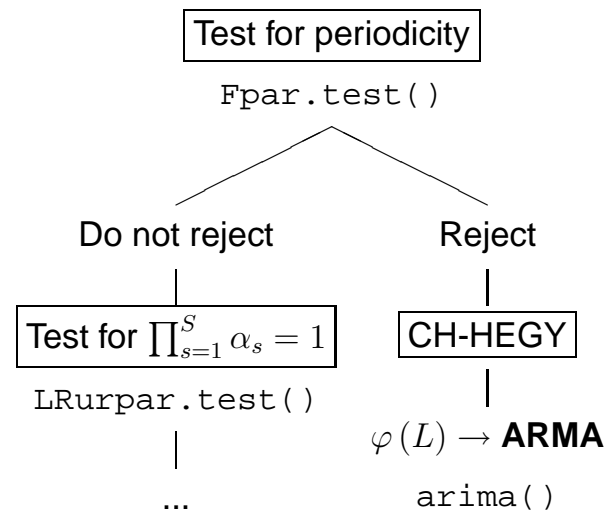
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- **Reference:** P.H. Franses (1996) 'Periodicity and Stochastic Trends in Economic Time Series', Oxford University Press.

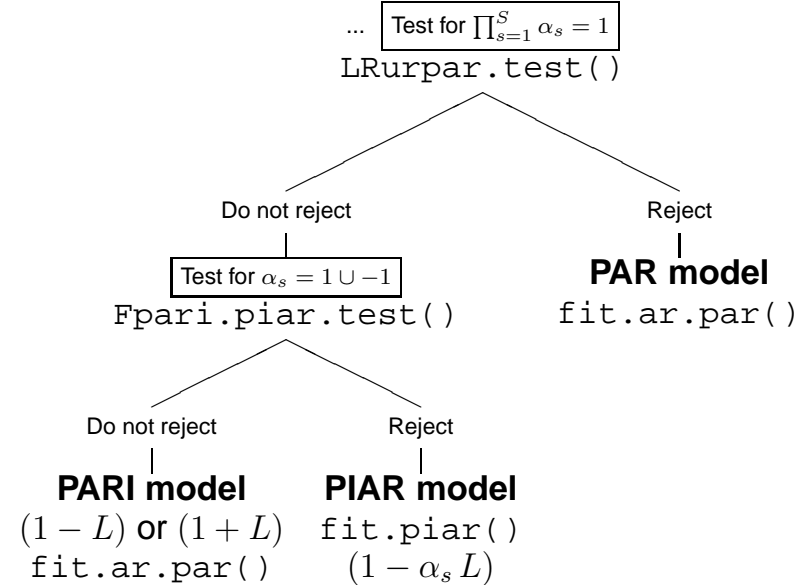
## Analysis Procedure 1/2



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## Analysis Procedure 2/2



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## Directions for Further Development

- Bootstrap techniques for the HEGY and CH tests.

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- Mixed AR-PAR models.