

# Package: actfts (via r-universe)

March 7, 2025

**Type** Package

**Title** Autocorrelation Tools Featured for Time Series

**Version** 0.3.0

**Maintainer** Sergio Sierra <sergiochess95@gmail.com>

**Description** The 'actfts' package provides tools for performing autocorrelation analysis of time series data. It includes functions to compute and visualize the autocorrelation function (ACF) and the partial autocorrelation function (PACF). Additionally, it performs the Dickey-Fuller, KPSS, and Phillips-Perron unit root tests to assess the stationarity of time series. Theoretical foundations are based on Box and Cox (1964) <[doi:10.1111/j.2517-6161.1964.tb00553.x](https://doi.org/10.1111/j.2517-6161.1964.tb00553.x)>, Box and Jenkins (1976) <[doi:10.1080/01621459.1970.10481180](https://doi.org/10.1080/01621459.1970.10481180)>, and Box and Pierce (1970) <[doi:10.1093/biomet/65.2.297](https://doi.org/10.1093/biomet/65.2.297)>. Statistical methods are also drawn from Kolmogorov (1933) <[doi:10.1007/BF00993594](https://doi.org/10.1007/BF00993594)>, Kwiatkowski et al. (1992) <[doi:10.1016/0304-4076\(92\)90104-Y](https://doi.org/10.1016/0304-4076(92)90104-Y)>, and Ljung and Box (1978) <[doi:10.1093/biomet/65.2.297](https://doi.org/10.1093/biomet/65.2.297)>. The package integrates functions from 'forecast' (Hyndman & Khandakar, 2008) <<https://CRAN.R-project.org/package=forecast>>, 'tseries' (Trapletti & Hornik, 2020) <<https://CRAN.R-project.org/package=tseries>>, 'xts' (Ryan & Ulrich, 2020) <<https://CRAN.R-project.org/package=xts>>, and 'stats' (R Core Team, 2023) <<https://stat.ethz.ch/R-manual/R-devel/library/stats/html/00Index.html>>. Additionally, it provides visualization tools via 'plotly' (Sievert, 2020) <<https://CRAN.R-project.org/package=plotly>> and 'reactable' (Glaz, 2023) <<https://CRAN.R-project.org/package=reactable>>. The package also incorporates macroeconomic datasets from the U.S. Bureau of Economic Analysis: Disposable Personal Income (DPI) <<https://fred.stlouisfed.org/series/DPI>>, Gross Domestic Product (GDP) <<https://fred.stlouisfed.org/series/GDP>>, and Personal Consumption Expenditures (PCEC) <<https://fred.stlouisfed.org/series/PCEC>>.

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**Encoding** UTF-8

**LazyData** true

**Imports** openxlsx, plotly, reactable, tseries, xts, stats, forecast,  
lifecycle

**RoxygenNote** 7.3.2

**Depends** R (>= 2.10)

**URL** <https://github.com/SergioFinances/actfts>,  
<https://sergiofinances.github.io/actfts/>

**BugReports** <https://github.com/SergioFinances/actfts/issues>

**Suggests** dplyr, knitr, rmarkdown, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**VignetteBuilder** knitr

**Roxygen** list(markdown = TRUE)

**Config/pak/sysreqs** make libicu-dev libssl-dev

**Repository** <https://sergiofinances.r-universe.dev>

**RemoteUrl** <https://github.com/sergiofinances/actfts>

**RemoteRef** HEAD

**RemoteSha** 665ee138a3f610d8b91c24553aea012afb0e16e6

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acfinter

*ACF and PACF Analysis with Interactive Features*

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## Description

acfinter computes and visualizes the ACF and PACF of a given time series, performs stationarity tests, and optionally generates interactive tables and plots.

**Usage**

```
acfinter(
  datag,
  lag = 72,
  ci.method = "white",
  ci = 0.95,
  interactive = NULL,
  delta = "levels",
  download = FALSE
)
```

**Arguments**

datag	A numeric vector or a time series object.
lag	Maximum number of lags for the ACF and PACF. Default is 72.
ci.method	Method for confidence intervals: "white" (default) or "ma".
ci	Confidence level for confidence intervals. Default is 0.95.
interactive	Character string specifying whether to create an interactive table: "acftable" for the ACF-PACF table, "stattable" for the stationarity tests table. Default is NULL.
delta	Transformation of the data: "levels" (default), "diff1", "diff2", or "diff3".
download	Logical indicating whether to save the results as files. Default is FALSE.

**Value**

A list with two elements: "ACF-PACF Test" and "Stationary Test". The function also creates interactive plots and tables if specified.

**Examples**

```
data <- actfts::GDPEEUU
result <- actfts::acfinter(data, lag = 20, ci.method = "white", interactive = "acftable")
print(result)
```

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DPIIEUU

*Gross Domestic Product of the United States.*


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**Description**

This dataset contains the disposable personal income of the United States from 01/01/1947 to the present with quarterly frequency.

**Usage**

```
DPIIEUU
```

**Format**

A dataset in xts format with one variable and several files that are automatically updated depending on the update of the data's FRED:

**DPI** Disposable Personal Income in billions of dollars

**Source**

<https://fred.stlouisfed.org/series/DPI>

**References**

U.S. Bureau of Economic Analysis, Disposable Personal Income (DPI), retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/DPI>

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GDPEEUU

*Gross Domestic Product of the United States.*

---

**Description**

This dataset contains the gross domestic product of the United States from 01/01/1947 to the present with quarterly frequency.

**Usage**

GDPEEUU

**Format**

A dataset in xts format with one variable and several files that are automatically updated depending on the update of the data's FRED:

**GDP** Gross Domestic product in billions of dollars

**Source**

<https://fred.stlouisfed.org/series/GDP>

**References**

U.S. Bureau of Economic Analysis, Gross Domestic Product (GDP), retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDP>

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PCECEEUU

*Personal Consumption Expenditures of the United States.*

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**Description**

This dataset contains the personal consumption expenditures of the United States from 01/01/1947 to the present with quarterly frequency.

**Usage**

PCECEEUU

**Format**

A dataset in xts format with one variable and several files that are automatically updated depending on the update of the data's FRED:

**PCEC** Personal Consumption Expenditures in billions of dollars

**Source**

<https://fred.stlouisfed.org/series/PCEC>

**References**

U.S. Bureau of Economic Analysis, Personal Consumption Expenditures (PCEC), retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/PCEC>

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