

Package: rjd3highfreq (via r-universe)

October 29, 2024

Type Package

Title Seasonal Adjustment of High Frequency Data with 'JDemetra+ 3.x'

Version 2.1.1.9000

Description R Interface to 'JDemetra+ 3.x'

(<https://github.com/jdemetra>) time series analysis software.

It provides functions for seasonal adjustment of high-frequency data displaying multiple, non integer periodicities.

Pre-adjustment with extended airline model and Arima Model Based decomposition.

Depends R (>= 4.1.0)

Imports rJava (>= 1.0-6), RProtoBuf (>= 0.4.17), rjd3toolkit (>= 3.2.2), rjd3sts (>= 2.1.0), checkmate, methods

Remotes github::rjdverse/rjd3toolkit, github::rjdverse/rjd3sts

SystemRequirements Java (>= 17)

License EUPL

URL <https://github.com/rjdverse/rjd3highfreq>,
<https://rjdverse.github.io/rjd3highfreq/>

LazyData TRUE

Suggests knitr, rmarkdown

RoxygenNote 7.3.1

BugReports <https://github.com/rjdverse/rjd3highfreq/issues>

Encoding UTF-8

Collate 'utils.R' 'jd3_extendedairline.R' 'jd3_fractionalairline.R'
'plot.R' 'print.R' 'zzz.R'

Repository <https://aqlt.r-universe.dev>

RemoteUrl <https://github.com/rjdverse/rjd3highfreq>

RemoteRef HEAD

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.arima_extract	<i>Title</i>
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Description

Title

Usage

```
.arima_extract(jrslt, path)
```

Arguments

path

.extendedairline_estimation
Title

Description

Title

Usage

```
.extendedairline_estimation(  
  jregarima,  
  jspec,  
  eps = 1e-09,  
  exactHessian = FALSE  
)
```

Arguments

exactHessian

.extendedairline_regarima
Creates a java RegArima models based on an extended airline spec

Description

Creates a java RegArima models based on an extended airline spec

Usage

```
.extendedairline_regarima(y, jspec, mean = FALSE, X = NULL)
```

Arguments

y	y
jspec	Java spec
mean	Mean correction (to be avoided)
X	Regression variables

Value

A Java RegArima model

Examples

```
jspec<- .extendedairline_spec(c(12))  
.extendedairline_regarima(rjd3toolkit::ABS$X0.2.09.10.M, jspec)
```

.extendedairline_spec *Internal routine to create an ExtendedAirlineSpec*

Description

Internal routine to create an ExtendedAirlineSpec

Usage

```
.extendedairline_spec(  
  periodicities,  
  differencing = -1,  
  ar = FALSE,  
  toint = FALSE  
)
```

Arguments

<code>periodicities</code>	Periodicities
<code>differencing</code>	Differencing order. -1 for automatic computation
<code>ar</code>	Use of an AR regular stationary polynomial instead of a MA polynomial
<code>toint</code>	Round periodicities to integers

Value

A Java ExtendedAirlineSpec object

Examples

```
.extendedairline_spec(c(7, 365.25))
```

.extended_airline_loglevel
Title

Description

Title

Usage

```
.extended_airline_loglevel(jregarima, jspec, precision = 1e-05)
```

Arguments

precision

.extended_airline_outliers
Title

Description

Title

Usage

```
.extended_airline_outliers(  
  jregarima,  
  jspec,  
  types = c("ao"),  
  start = 0,  
  end = 0,  
  critical_value = 0,  
  max_outliers = 30,  
  max_round = 30  
)
```

Arguments

max_round

.plot_jd	<i>Custom Plot Function on JD+ template</i>
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Description

This function creates a customized plot in the same template as JD+ GUI color and forms.

Usage

```
.plot_jd(x, y, col, legend_txt = NULL, ...)
```

Arguments

x	Numeric vector, x-axis values.
y	List of numeric vectors, y-axis values for different series.
col	Vector of colors for different series.
legend_txt	Character vector of legend labels for different series.
...	Additional graphical parameters.

Value

'NULL' (invisible).

.ucm_extract	<i>Title</i>
--------------	--------------

Description

Title

Usage

```
.ucm_extract(jrslt, cmp)
```

Arguments

cmp

fractionalAirlineDecomposition

Perform an Arima Model Based (AMB) decomposition

Description

Perform an Arima Model Based (AMB) decomposition

Usage

```
fractionalAirlineDecomposition(
  y,
  period,
  sn = FALSE,
  stde = FALSE,
  nbcasts = 0,
  nfcasts = 0,
  log = FALSE,
  y_time = NULL
)
```

Arguments

y	input time series.
period	period of the seasonal component, any positive real number.
sn	decomposition into signal and noise (2 components only). The signal is the seasonally adjusted series and the noise the seasonal component.
stde	Boolean: TRUE: compute standard deviations of the components. In some cases (memory limits), it is currently not possible to compute them
nbcasts	number of backcasts.
nfcasts	number of forecasts.
y_time	vector of times at which 'y' is indexed
adjust	Boolean: TRUE: actual fractional airline model is to be used, FALSE: the period is rounded to the nearest integer.

fractionalAirlineDecomposition_raw

Title

Description

Title

Usage

```
fractionalAirlineDecomposition_raw(  
  y,  
  period,  
  sn = FALSE,  
  stde = FALSE,  
  nbcasts = 0,  
  nfcasts = 0  
)
```

Arguments

nfcasts

```
fractionalAirlineDecomposition_ssf  
  Title
```

Description

Title

Usage

```
fractionalAirlineDecomposition_ssf(jdecomp)
```

Arguments

jdecomp

```
fractionalAirlineEstimation  
  Linearize the series with a fractional airline model
```

Description

Linearize the series with a fractional airline model

Usage

```
fractionalAirlineEstimation(
  y,
  periods,
  x = NULL,
  ndiff = 2,
  ar = FALSE,
  outliers = NULL,
  criticalValue = 6,
  precision = 1e-12,
  approximateHessian = FALSE,
  nfcasts = 0,
  log = FALSE,
  y_time = NULL
)
```

Arguments

y	input time series.
periods	vector of periods values of the seasonal component, any positive real numbers.
x	matrix of user-defined regression variables (see rjd3toolkit for building calendar regressors).
outliers	type of outliers sub vector of c("AO", "LS", "WO")
criticalValue	Critical value for automatic outlier detection
precision	Precision of the likelihood
approximateHessian	Compute approximate hessian (based on the optimizing procedure)
nfcasts	Number of forecasts
log	a logical
y_time	vector of times at which 'y' is indexed

jd2r_fractionalAirlineDecomposition
Title

Description

Title

Usage

```
jd2r_fractionalAirlineDecomposition(
  jrslt,
  sn = FALSE,
  stde = FALSE,
  period,
  log = FALSE,
  y_time = NULL
)
```

Arguments

y_time vector of times at which the time series is indexed

jd2r_multiAirlineDecomposition
Title

Description

Title

Usage

```
jd2r_multiAirlineDecomposition(
  jrslt,
  stde = FALSE,
  periods,
  log = FALSE,
  y_time = NULL
)
```

Arguments

y_time vector of times at which the time series is indexed

multiAirlineDecomposition
*Perform an Arima Model Based (AMB) decomposition on several pe-
riodcities at once*

Description

Perform an Arima Model Based (AMB) decomposition on several periodicities at once

Usage

```
multiAirlineDecomposition(
  y,
  periods,
  ndiff = 2,
  ar = FALSE,
  stde = FALSE,
  nbcasts = 0,
  nfcasts = 0,
  log = FALSE,
  y_time = NULL
)
```

Arguments

y	input time series.
periods	vector of periods values of the seasonal component, any positive real numbers.
stde	Boolean: TRUE: compute standard deviations of the components. In some cases (memory limits), it is currently not possible to compute them
nbcasts	number of backcasts.
nfcasts	number of forecasts.
y_time	vector of times at which 'y' is indexed
adjust	Boolean: TRUE: actual fractional airline model is to be used, FALSE: the period is rounded to the nearest integer.
sn	decomposition into signal and noise (2 components only). The signal is the seasonally adjusted series and the noise the seasonal component.

multiAirlineDecomposition_raw
Title

Description

Title

Usage

```
multiAirlineDecomposition_raw(
  y,
  periods,
  ndiff = 2,
  ar = FALSE,
  stde = FALSE,
  nbcasts = 0,
  nfcasts = 0
)
```

Arguments

nfcasts

multiAirlineDecomposition_ssf
Title

Description

Title

Usage

```
multiAirlineDecomposition_ssf(jdecomp)
```

Arguments

jdecomp

plot.JDFractionalAirlineDecomposition
Plot Function for JDFractionalAirlineDecomposition Objects

Description

This function creates a plot for the result of an Arima Model Based (AMB) decomposition of one or several frequencies (class 'JDFractionalAirlineDecomposition'). It shows the decomposition and the component of the model.

Usage

```
## S3 method for class 'JDFractionalAirlineDecomposition'
plot(x, from, to, type_chart = c("y-sa-trend", "cal-seas-irr"), ...)
```

Arguments

x	An object of class 'JDFractionalAirlineDecomposition'.
from	'Date' or 'POSIXt' object, optional starting point for x-axis.
to	'Date' or 'POSIXt' object, optional ending point for x-axis.
type_chart	Character vector specifying the type of chart to plot ("y-sa-trend", "cal-seas-irr").
...	Additional graphical parameters.

Value

'NULL' (invisible).

```
plot.JDFractionalAirlineEstimation
    Plot Function for JDFractionalAirlineEstimation Objects
```

Description

This function creates a plot for the result of fractional airline model (class ‘JDFractionalAirlineEstimation’). It shows the raw data and linearized series.

Usage

```
## S3 method for class 'JDFractionalAirlineEstimation'
plot(x, from, to, ...)
```

Arguments

x	An object of class ‘JDFractionalAirlineEstimation’.
from	‘Date’ or ‘POSIXt’ object, optional starting point for x-axis.
to	‘Date’ or ‘POSIXt’ object, optional ending point for x-axis.
...	Additional graphical parameters.

Value

‘NULL’ (invisible).

```
print.JDFractionalAirlineDecomposition
    Print method for 'JDFractionalAirlineDecomposition' objects
```

Description

This function prints informations on the result of a Fractional Airline model (classe JDFractionalAirlineDecomposition).

Usage

```
## S3 method for class 'JDFractionalAirlineDecomposition'
print(x, digits = max(3L, getOption("digits") - 3L), ...)
```

Arguments

x	An object of class ‘JDFractionalAirlineDecomposition’.
digits	Number of digits to round numerical values (default is 3 or digits - 3 from options).

Value

The original object 'x'.

```
print.JDFractionalAirlineEstimation
```

Print method for 'JDFractionalAirlineEstimation' objects

Description

This function prints informations on the result of a Fractional Airline model (classe JDFractionalAirlineEstimation).

Usage

```
## S3 method for class 'JDFractionalAirlineEstimation'  
print(x, digits = max(3L, getOption("digits") - 3L), ...)
```

Arguments

x	An object of class 'JDFractionalAirlineEstimation'.
digits	Number of digits to round numerical values (default is 3 or digits - 3 from options).

Value

The original object 'x'.

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