

Package ‘BETS’

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Description The Brazilian Economic Time Series (BETS) package provides access and information about the most important brazilian economic time series.

License GPL(>=2)

URL <https://github.com/pedrocostaferreira/BETS>

LazyData true

Suggests knitr, rmarkdown,
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acf	<i>Auto- and Cross- Covariance and -Correlation Function Estimation</i>
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Description

This function calls the acf function in the stats package and processes to drop lag-0 of the acf. It only works for univariate time series, so x below should be 1-dimensional.

Usage

```
acf(x, lag.max = NULL, type = c("correlation", "covariance", "partial")[1],
    plot = TRUE, na.action = na.fail, demean = TRUE, ...)
```

Arguments

x	A univariate or multivariate (not ccf) numeric ts object or a numeric vector or matrix, or an acf object.
lag.max	An integer. Maximum number of lags at which to calculate the acf. Default is $10 \cdot \log_{10}(N/m)$ where N is the number of observations and m the number of series.
type	A character The type of acf to be computed. Allowed values are "correlation" (the default), "covariance" or "partial".
plot	A boolean. If TRUE (the default) the acf is plotted.
na.action	A function to be called to handle missing values. na.pass can be used.
demean	A boolean. Should the covariances be about the sample means?
...	Further arguments to be passed to plot.acf

Value

An object of class "acf", which is a list with the following elements:

- lag A three dimensional array containing the lags at which the acf is estimated.
- acf An array with the same dimensions as lag containing the estimated acf.
- type The type of correlation (same as the type argument).
- n.used The number of observations in the time series.
- series The name of the series x.
- snames The series names for a multivariate time series.

References

Original authors of stats::acf are: Paul Gilbert, Martyn Plummer, B.D. Ripley. This wrapper is written by Kung-Sik Chan

See Also

- `plot.acf`, `ARMAacf` for the exact autocorrelations of a given ARMA process.
- `acf` - the original function from the package 'stats'

Examples

```
data(rwalk)
model1=lm(rwalk~time(rwalk))
summary(model1)
acf(rstudent(model1),main='')
```

BETS

BETS: A package for obtaining and analysing thousands of brazilian economic time series.

Description

The Brazilian Economic Time Series (BETS) package provides access and information about the most important brazilian economic time series.

These series are created by three influential centers: the Central Bank of Brazil (BCB), the Brazilian Institute of Geography and Statistics (IBGE) and the Brazilian Institute of Economics, from the Getulio Vargas Foundation (FVG-IBRE). Currently, there are more than 15.000 available time series, most of them free of charge. Besides providing access to this vast database, the package allows the user to interact with data in an easy and friendly way.

For instance, the user can search for a time series using keywords. More importantly, it installs several consecrated packages for time series analysis, giving the user the option to perform a complete analysis without having to worry about installing and loading other packages. In a near future, the authors will publish a series of R exercises to be solved with BETS and its statistical/econometrical tools, therefore helping the user to understand the behavior of brazilian time series.

Note

The authors would like to thank the support given by the Getulio Vargas Foundation (FGV).

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BETSget*Get a complete time series from a BETS database*

Description

Extracts a complete time series from either the Central Bank of Brazil (BCB), the Brazilian Institute of Geography and Statistics (IBGE) or the Brazilian Institute of Economics (FGV/IBRE).

Usage

```
BETSget(code)
```

Arguments

code	A character. The unique code that references the time series. This code can be obtained by using the BETSsearch function.
------	---

Value

A [ts](#) (time series) object containing the desired series.

Note

Due to the significant size of the databases, it could take a while to retrieve the values. However, it shouldn't take more than 90 seconds.

See Also

[ts](#), [BETSsearch](#) and [seas](#)

Examples

```
# Anual series: GDP at constant prices, in R$ (brazilian reais)
BETSget(1208)

# International reserves - Cash concept
x <- BETSget("3543")
plot(x)

# Exchange rate - Free - United States dollar (purchase)
k <- BETSget(3691)
requires(seasonal)
m <- seas(k)
plot(m)
```

BETSSave.sas	<i>Export a time series to SAS</i>
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Description

Writes a time series to a .sas (SAS) file.

Usage

```
BETSSave.sas(code, data = NULL, file.name = "series")
```

Arguments

code	An integer. The unique identifier of the series within the BETS database.
data	A data.frame or a ts. Contains the data to be written. If data is supplied, the BETS database will not be searched.
file.name	A character. The name of the output file. The default is 'series.sas'.

Value

None

BETSSave.spss	<i>Export a time series to SPSS</i>
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Description

Writes a time series to a .spss (SPSS) file.

Usage

```
BETSSave.spss(code, data = NULL, file.name = "series")
```

Arguments

code	An integer. The unique identifier of the series within the BETS database.
data	A data.frame or a ts. Contains the data to be written. If data is supplied, the BETS database will not be searched.
file.name	A character. The name of the output file. The default is 'series.spss'.

Value

None

BETSsave.stata	<i>Export a time series to STATA</i>
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Description

Writes a time series to a .dta (STATA) file.

Usage

```
BETSsave.stata(code, data = NULL, file.name = "series")
```

Arguments

code	An integer. The unique identifier of the series within the BETS database.
data	A data.frame or a ts. Contains the data to be written. If data is supplied, the BETS database will not be searched.
file.name	A character. The name of the output file. The default is 'series.dta'.

Value

None

BETSsearch	<i>Search for a Brazilian Economic Time Series</i>
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Description

Searches the BETS databases for a time series by its name, source, periodicity, code, data, unit of measurement and database name.

Usage

```
BETSsearch(name, src, periodicity, unit, code, view = TRUE)
```

Arguments

name	A character. The complete name or a part of the name of the series.
src	A character. The source of the series. See the 'Details' section for a list of the available sources.
periodicity	A character. The periodicity of the series. See the 'Details' section for a list of possible values.
unit	A character. The unit of measurement of the data. See the 'Details' section for a list of possible values.
code	An integer. The index of the series within the database.
view	A boolean. The default is TRUE. If set to FALSE, the results are NOT going to be shown.

Details

- Possible values for the parameter src:

IBGE	Brazilian Institute of Geography and Statistics
BCB	Central Bank of Brazil
FGV	Getulio Vargas Foundation
FGV-IBRE	Getulio Vargas Foundation - Brazilian Institute of Economics
BCB e FGV	Central Bank of Brazil and Getulio Vargas Foundation
BCB-Deban	Central Bank of Brazil - Department of Banking and Payments
BCB-Depin	Central Bank of Brazil - Department of International Reserves
BCB-Derim	Central Bank of Brazil - Department of International Affairs
BCB-Desig	Central Bank of Brazil - Department of Financial Monitoring
BCB-Secre	Central Bank of Brazil - Executive Secretariat
BCB-Demab	Central Bank of Brazil - Department of Open Market Operations
BCB-Denor	Central Bank of Brazil - Department of Financial System Regulation
BCB-Depec	Central Bank of Brazil - Department of Economics
Sisbacen	Central Bank of Brazil Information System
Abecip	Brazilian Association of Real Estate Loans and Savings Companies

- Possible values for the parameter `periodicity`:

A	anual data
M	monthly data
Q	quarterly data
W	weekly data
D	daily data

- Possible values for the parameter `unit`:

R\$	brazilian reais
\$	US dollars
%	percentage

Value

A list that can be interpreted as a `data.frame`. The fields are described below.

<code>code</code>	The code/index of the series within the database
<code>description</code>	The description of the series
<code>periodicity</code>	The periodicity of the series
<code>start</code>	Starting date of the series
<code>source</code>	The source of the series
<code>unit</code>	The unit of measurement of the data

Note

This function uses `sqldf` for optimization.

References

Central Bank of Brazil. [Time Series Management System - v2.1](#)

Examples

```
BETSsearch(name="sales")
```

```
# Output: BETS-package: 55 of 12981 time series !

BETSsearch(code= 4500)
# Output: BETS-package: DONE!

BETSsearch(src="Denor")
# Output: BETS-package: 1 of 12981 time series !

BETSsearch(periodicity="A")
# Output: BETS-package: 2308 of 12981 time series!
```

<code>get.data.frame</code>	<i>Get a BETS series as a data.frame.</i>
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Description

By default, `BETSget` returns a `ts` object. However, there are many situations in which is more convenient to work with a `data.frame`. So, `get.data.frame` receives the code of a BETS series and returns a `data.frame` containing the data of the corresponding series. Alternatively, a `ts` can be supplied, in which case the BETS databases will not be searched.

Usage

```
get.data.frame(code, ts = NULL)
```

Arguments

<code>code</code>	An integer. The unique identifier of the series within the BETS database.
<code>ts</code>	An <code>ts</code> object. A time series to be formatted as a <code>data.frame</code> .

Value

A `data.frame`. The first column contains the dates. The second, its values.

IIE- Br- Expectations	<i>Brazilian Market Expectations</i>
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Description

The `IIE_Br_expectations` is a measure of dispersion of the brazilian market expectations, calculated by the Central Bank of Brazil (BCB) and opinion polls conducted by the Brazilian Institute of Economics (FGV/IBRE). More precisely, the `IIE_Br_expectations` is composed by two other indicators:

- Market expectations formed according to the IPCA (National Consumer Price Index), the base interest rate (SELIC) and the primary deficit
- Surveys of opinion from the industry, commerce, services and construction sectors.

Format

A `ts` object with 185 observations.

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Source

Brazilian Institute of Economics (FGV/IBRE) and Central Bank of Brasil (BCB)

References

A shiny app with IIE-Br-expectations plots can be found <https://pedroferreira.shinyapps.io/incerteza/>

IIE-Br-Market	<i>IIE-Br-Market</i>
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Description

O IIE-Br-Market visa mensurar variabilidade do mercado acionário IIE-Br-Market.

Brasileiro e seu grau de risco, ou seja, diferente IIE-Br-expectativa busca mensurar a variabilidade do sentimento do mercado no tempopresente.

O IIE-Br-Market é composto pela volatilidade dos últimos 21 dias decalculo dos preços das aC' C5es do IBOVESPA e opremio de cinco anos do Credit Swap Default.

Format

A `ts` object with 185 observations.

Author(s)

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Source

Brazilian Institute of Economics (FGV/IBRE) and Central Bank of Brasil (BCB)

References

A shiny app with IIE-Br-expectations plots can be found <https://pedroferreira.shinyapps.io/incerteza/>

IIE-Br-Midia

*IIE-Br-Midia***Description**

O IIE-Br-Midia é uma medida de incerteza baseada nas publicações dos principais jornais do país. Para ser calculado, ele leva em conta a frequência de notícias contendo determinados termos, que remetem a incerteza econômica. Esse índice foi inspirado em Baker et al.(2015) e Alexopoulos and Cohen (2009), que construíram índices semelhantes para os Estados Unidos. Os autores mostram que períodos de maior incerteza tendem a ser representados em notícias contendo os fatos causadores da incerteza. Essas notícias por consequência, disseminam a sensação de incerteza para consumidores e produtores, e influenciam suas tomadas de decisões. Filho(2014) também cria um índice semelhante para a economia brasileira.

Para ser construído, o IIE-Br-Midia utilizou diferentes bases de dados, de forma a contemplar os principais meios de disseminação de notícias. A primeira base, utilizou dados das redes sociais Twitter e Facebook. A segunda diz respeito, aos sites dos jornais, isto é, das versões online dos jornais e por fim, a última base de dados foram as versões impressas dos jornais, em formato digital. Todo o conjunto de dados foi capturado e manipulado, computacionalmente, usando a linguagem R.

Format

A `ts` object with 185 observations.

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Source

Brazilian Institute of Economics (FGV/IBRE) and Central Bank of Brasil (BCB)

References

A shiny app with IIE-Br-expectations plots can be found <https://pedroferreira.shinyapps.io/incerteza/>

t_test

*Significância dos parâmetros de um modelo Arima***Description**

Realiza o teste de significância dos parâmetros de um modelo ARIMA.

Usage

```
t_test(arima_model, n_x = 0)
```

Arguments

<code>arma_model</code>	Modelo arima utilizado
<code>n_x</code>	Numero de variaveis exogenas

Value

Objeto do tipo `list`

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