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, testthat

VignetteBuilder knitr

RoxygenNote 5.0.1

R topics documented:

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 30.000 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 statiscal/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, data.frame = FALSE)
```

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
int.reserves <- BETSget("3543")
plot(int.reserves)

# Exchange rate - Free - United States dollar (purchase)
us.brl <- BETSget(3691)
requires(seasonal)
us.brl.seasonally_adjusted <- seas(us.brl)
plot(us.brl.seasonally_adjusted)
```

`BETSsave.sas` *Export a time series to SAS*

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

Examples

```
# Exchange rate - Free - United States dollar (purchase)
 us.brl <- BETSget(3691)
 requires(seasonal)
 us.brl.seasonally_adjusted <- seas(us.brl)
 BETSsave.sas(data = us.brl.seasonally_adjusted,file.name="us.brl.seasonally_adjusted")
 # Or
 BETSsave.sas(code=3691,file.name="us.brl")
```

`BETSsave.spss` *Export a time series to SPSS*

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

Examples

```
# Exchange rate - Free - United States dollar (purchase)
 us.brl <- BETSget(3691)
 requires(seasonal)
 us.brl.seasonally_adjusted <- seas(us.brl)
 BETSsave.spss(data = us.brl.seasonally_adjusted,file.name="us.brl.seasonally_adjusted")
   # Or
 BETSsave.spss(code=3691,file.name="us.brl")
```

BETSsave.stata *Export a time series to STATA*

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

Examples

```
# Exchange rate - Free - United States dollar (purchase)
 us.brl <- BETSget(3691)
 requires(seasonal)
 us.brl.seasonally_adjusted <- seas(us.brl)
BETSsave.stata(data = us.brl.seasonally_adjusted,file.name="us.brl.seasonally_adjusted")
 # Or
 BETSsave.stata(code=3691,file.name="us.brl")
```

BETSsearch *Search for a Brazilian Economic Time Series*

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	Cetral Bank of Brazil - Department of Banking and Payments
BCB-Depin	Central Bank of Brazil - Department of International Reserves
BCB-Derin	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	quaterly data
W	weekly data
D	daily data

- Possible values for the parameter `unit`:

R$	brazilian reais
$	US dolars
%	percentage

Value

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

code	The code/index of the series within the database

description	The description of the series
periodicity	The periodicity of the series
start	Starting date of the series
source	The source of the series
unit	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!
```

---

get.data.frame *Get a BETS series as a data.frame.*

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

Value

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

IIE- Br- Expectations *Uncertawty indicator of the Brazilian economy - expectation*

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 the construction sectors.

Format

A ts object with 185 observations.

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Source

Brazilian Institute of Economics (FGV/IBRE)

References

A shiny app with IIE-Br-expectations plots can be found here

IIE-Br-Market *Uncertawty indicator of the Brazilian economy - market*

Description

O IIE-Br-Market visa mensurar variabilidade do mercado acionaario 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 e composto pela volatilidade dos ultimos 21 dias decalculo dos precos das acoess 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)

References

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

`IIE-Br-Media` *Uncertawty indicator of the Brazilian economy - Media*

Description

O `IIE-Br-Midia` e uma medida de incerteza baseada nas publicacoes dos principais jornais do pais. Para ser calculado, ele leva em conta a frequencia de noticias contendo determinados termos, que remetem a incerteza economica. Esse indice foi inspirado em Baker et al.(2015) e Alexopoulos and Cohen (2009), que construiram indices semelhantes para os Estados Unidos. Os autores mostram que periodos de maior incerteza tendem a ser representados em noticias contendo os fatos causadores da incerteza. Essas noticias por consequencia, disseminam a sensaC'C#o de incerteza para consumidores e produtores, e influenciam suas tomadas de decisoes. Filho(2014) tambem cria um indice semelhante para a economia brasileira.

Para ser construido, o `IIE-Br-Midia` utilizou diferentes bases de dados, de forma a contemplar os principais meios de disseminaC'C#o de noticias. A primeira base, utilizou dados das redes sociais Twitter e Facebook. A segunda diz respeito, aos sites dos jornais, isto C), das versoes online dos jornais e por fim, a ultima base de dados foram as versoes 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.

Author(s)

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Bruno R de Miranda Neto <bruno.neto@fgv.br>, Itaiguara de Oliveira Bezerra <itaiguara.bezerra@fgv.br>.

Source

Brazilian Institute of Economics (FGV/IBRE)

References

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

msg *Format and show a console message.*

Description

Customizes a message and shows it in the console.

Usage

```
msg(..., skip_before = TRUE, skip_after = FALSE)
```

Arguments

...	Arguments to be passed to message
skip_before	A boolean. Indicates if a line should be skipped before the message.
skip_after	A boolean. Indicates if a line should be skipped after the message.

Value

None

t_test *Significance of parameter an Arima model*

Description

Performs the test of significance of the parameter an Arima model

Usage

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

Arguments

arima_model	Arima model used
n_x	Number of variables Exogenous

Value

Objeto do tipo list

Author(s)

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Examples

```
data("AirPassengers")
fit.air<- Arima(AirPassengers,order = c(1,1,1),
    seasonal = c(1,1,1), method ="ML",lambda=0)
    summary(fit.air)

significance test for model SARIMA(1,1,1)(1,1,1)_12
t.test(arima_model = fit.air)
```

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