Package ‘iClick’

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R topics documented:

iClick-package .................................................. 2
boxPlotX ......................................................... 2
calendarHeat .................................................. 3
cumulatedPlotX ................................................. 4
cutAndStack .................................................... 5
drawdownPlotX ................................................ 6
drawupPlotX ..................................................... 7
drawups ........................................................ 8
FFplusMOM ....................................................... 8
IBM ............................................................ 9
iClick.ARIMA ................................................... 10
Description

A Output GUI designed to simplify the use of R packages and functions by clicking.

Author(s)

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boxPlotX  

Description

This function generates plot by iClick.VisOneReturns.

Usage

boxPlotX(X, col = "indianred2", title = TRUE)

Arguments

x  
A timeSeries object, single time series returns.

col  
String for color.

title  
Whether to generate title of graph.

Details

This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.
**calendarHeat**

**Value**

Plot a graph

**Author(s)**

Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

**See Also**

Functions in fBasics.

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**calendarHeat**

*Calendar Heatmap Plot*

**Description**

This function generates calendar heatmap plot up to six year, due to visibility.

**Usage**

```r
calendarHeat(values, ncolors = 99, color = "r2b", date.form = "%Y-%m-%d")
```

**Arguments**

- `values`: Daily data of price or others.
- `ncolors`: Number of color for heatmap.
- `color`: Color plate selected, selection includes c("r2b","r2g","w2b").
- `date.form`: Default date form.

**Details**

This function is within the iClick GUI, is executed within iClick.VisAssetPrice().

**Value**

Plot

**Author(s)**

Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University
cumulatedPlotX

Cumulative returns plot.

Description
This function generates plot by iClick.VisOneReturns().

Usage
cumulatedPlotX(x, index = 100, labels = TRUE, type = "l",
col = "indianred2", ylab = "Values", title = TRUE,
grid = TRUE, box = TRUE, rug = TRUE)

Arguments
x
A timeSeries object, single time series returns.
index
Returns index.
labels
Whether to generate label for the graph.
type
Type of graph.
col
Options for color.
ylab
String label for Y axis.
title
Whether to generate title for the graph.
grid
Whether to use grid in plot.
box
Whether to put the plot into a box.
rug
Whether to add rug.

Details
This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.

Value
Plot

Author(s)
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cutAndStack

Cut and Stack Plotting Function

Description

This function calls cut() to cut timeseries into several equal periods and plots over time.

Usage

```
cutAndStack(x, number, overlap = 0.1, type = "1", xlab = "Time", ylab = deparse(substitute(x)))
```

Arguments

- `x` A timeSeries object, single time series price.
- `number` Number of equal cut.
- `overlap` Percentage of overlapping across cuts.
- `type` Type of line.
- `xlab` Label of X axis.
- `ylab` Label of Y axis.

Details

This function is within the iClick GUI, is executed within iClick.VisAssetprice().

Value

Plot

Author(s)

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drawdownPlotX  Drawdown Returns Plots

Description
This function is within the iClick GUI, is executed within iClick.VisOneReturns(dat), the data frame dat has two columns, the first column is date index and the second one is numeric time series data.

Usage
drawdownPlotX(x, labels = TRUE, type = "l", col = "darkgreen", title = TRUE, ylab = "Down returns", grid = TRUE, box = TRUE, rug = TRUE)

Arguments
- x: A timeSeries object, single time series returns.
- labels: Whether to generate label for the graph.
- type: Type of line.
- col: Options for color.
- title: Whether to generate title for the graph.
- ylab: String for Y axis.
- grid: Whether to use grid in plot.
- box: Whether to put the plot into a box.
- rug: Whether to add rug.

Details
This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.

Value
Plot

Author(s)
Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

See Also
Functions in fBasics.
**Drawup Returns Plots**

**Description**
This function is within the iClick GUI, is executed within iClick.VisOneReturns(dat), the data frame dat has two columns, the first column is date index and the second one is numeric time series data.

**Usage**
drawupPlotX(x, labels = TRUE, type = "l", col = "Indianred2", title = TRUE, ylab = "Up Returns", grid = TRUE, box = TRUE, rug = TRUE)

**Arguments**
- **x**: A timeSeries object, single time series returns.
- **labels**: Whether to generate label for the graph.
- **type**: Type of line.
- **col**: Options for color.
- **title**: Whether to generate title for the graph.
- **ylab**: String for Y axis.
- **grid**: Whether to use grid in plot.
- **box**: Whether to put the plot into a box.
- **rug**: Whether to add rug.

**Details**
This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.

**Value**
Plot

**Author(s)**
Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

**See Also**
Functions in fBasic and fAssets.
**drawups**

*Calculate Drawup Returns for Drawup Plot*

**Description**

This function calculates drawup returns for plotting.

**Usage**

```r
drawups(x)
```

**Arguments**

- `x` A timeSeries object, single time series returns.

**Details**

This function is an internal function for drawplot of iClick GUI, which is executed on iClick.VisOneReturns GUI.

**Value**

Returns of draw up periods.

**Author(s)**

Ho Tsung-wu <tsungwu@mail.shu.edu.tw>

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**FFplusMOM**

*Data of Fama-French beta of 811 listed companies of SSEC*

**Description**

Average data of 811 listed companies of SSEC, 2001/1/03~2012

**Usage**

```r
data("FFplusMOM")
```
Format

A data frame with 811 observations on the following 4 variables.

- company: company code
- ret: company-specific average returns
- MK_BETA: CAPM factor beta
- HML_BETA: High-Minus-Low factor beta
- SMB_BETA: Small-Minus-Big factor beta
- MOM_BETA: Momentum factor beta

Details

Daily stock returns of 24 world national markets.

Source

Yahoo finance.

Examples

data(FFplusMOM)

---

**IBM**  

*Daily Price Data of IBM*

---

Description


Usage

data("IBM")

Format

A xts object with 2518 observations on the following 5 variables.

- open: A numeric vector, open price
- high: A numeric vector, maximum price
- low: A numeric vector, minimum price
- close: A numeric vector, close price
- volume: A numeric vector, trading volume
Details
Daily stock price data of IBM.

Source
Yahoo finance.

iClick.ARIMA
iClick GUI for ARIMA

Description
This GUI estimates ARIMA both with automatic lag selection and fixed lag length. The GUI is only only a GUI, but also a output format.

Usage
iClick.ARMAdat, AR = 1, MA = 1, n.ahead = 24, ic = "aic"

Arguments
dat Time series object, xts.
AR Pre-specified fixed AR order.
MA Pre-specified fixed MA order.
n.ahead Periods of out-of-sample forecast.
ic Information criteria for lag selection,ic=c("aic", "aicc", "bic"). See auto.arima() of package forecast.

Details
This GUI fits two ARMA, fixed orders and automatically fitted orders, and returns a two-part GUI with output on it. The outputs can be saved as .RData file for later use, the last row is the save button.

The saved filename is automatically generated by selections and results; for example, .aicOrderARIMA_102.RData represents the automatically fits ARIMA(p,d,q) orders are ARIMA(1,0,2) by AIC.

Using load(".aicOrderARIMA_102.RData") to retrieve the file and ls() to list objects, and use names() to show details of objects.

The input returns data must be in percentage form; namely, dlog()*100

Value
Fitted ARMA regression output.
iClick.GARCH

Author(s)
Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

See Also
arima() and auto.arima() of package forecast.

Examples

```r
## External data
data("world20")
y = na.omit(diff(log(world20[,1])))

## Simulation data
data = rnorm(200, 5, 1)
y = ts(data, start = c(1970, 1), frequency = 12)

iclick.ARIMA(y)

# More
iclick.ARIMA(y, AR = 2, MA = 2, n.ahead = 12, ic = "bic")
```

---

iClick.GARCH  iClick Output GUI for Univariate GARCH Models

Description
This GUI makes GARCH estimation of comparison easy. With a pre-selected GARCH type, it automatically fits eight probability distributions and conducts all diagnostic tests with a Click.

Usage

```r
iclick.GARCH(dat, meanEQ = meanEQ, garchEQ = garchEQ, n.ahead = 15)
```

Arguments

dat  Time series object, xts.
meanEQ  Specification of mean equation.
garchEQ  Specification of variance equation.
n.ahead  Number of out-of-sample forecasting period.
Details

This GUI fits 8 distributions for univariate GARCH with pre-selected GARCH types, and returns a 54-button GUI output. The outputs can be individually saved as .RData file for later use, the last row is the save button. The saved filename is automatically generated once clicked, in addition, corresponding .csv files will be generated also. The 54-button GUI is divided into 9 panes, and the last pane collects coefficient outputs and diagnostic tests together, which aims to make estimation comparison easy.

Value

Fitted GARCH regression output.

Author(s)

Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

See Also

library(rugarch)

Examples

```r
##==External data
data("world20")
y=na.omit(diff(log(world20[,1])))

##== Simulation data
data=rnorm(200,5,1)
y=ts(data, start = c(1970, 1), frequency = 12)

meanEQ=list(AE=1,MA=0,Exo=NULL, autoFitArma=FALSE, arfimaDiff=FALSE, archM=FALSE)
# If there are external regressors X, put them as Exo=X
# autoFitArma=TRUE, if you want to fit arma automatically.
# arfimaDiff=TRUE, to take ARFIMA difference
# archM=TRUE, to estimate GARCH-in-mean

garchEQ=list(AR=1,Q=1,exo=NULL)
# Type: "sGARCH", "eGARCH", "gjrGARCH", "igARCH", "apGARCH"
# please check rugarch for details.
# P is the ARCH order
# Q is the GARCH order

#iClick.GARCH(y,meanEQ, garchEQ, n.ahead=15)
# This computation takes more than 6 seconds, hence I added a # to block it.
```
Description
This GUI estimates ARIMA both with automatic lag selection and fixed lag length. The GUI is only a GUI, but also a output format.

Usage
iclickNlm(dep, indep, data, Formula=NULL, bootrep=99)

Arguments
data A R data object for lm()
dep scalar, the number of column as dependent variable
indep scalar, the numbers of column as independent variables
Formula A formula for lm, default is NULL, if specified, dep and indep should leave empty. See example below
bootrep Bootstrap replications, default is 99

Details
This GUI fits equaiton into lm regression.

Value
Fitted lm regression output.

Author(s)
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See Also
lm()

Examples
data("FFplusMOM")
iclick.lm(dep=2, indep=c(3,5:6), data=FFplusMOM, bootrep=9)

#Eq=RET~(MK_BETA+HML_BETA+SMB_BETA)^2
#iclick.lm(Formula=Eq, data=FFplusMOM, bootrep=9)
iClick.VisAssetPrice  Visualize Daily Asset Price

Description

This GUI conducts plots of daily asset price, including calendar heatmap and many plots which are not easy to use for new users.

Usage

iClick.VisAssetPrice(dat, color4 = "r2b", color5 = "jet")

Arguments

dat  Time series object, xts.
color4  Color choice for annual calendar heatmap, the default is "r2b".
color5  Color choice for 6-year calendar heatmap, the default is "jet".

Details

This GUI is designed for financial time series, mainly daily stock price. Other time series data works also, as long as it has a date column. We call function calendarPlot() from package "openair", and modified the function calendarHeat() to fit daily price, which is limited to 11 years.

Value

Output GUI

Author(s)

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Examples

#data("IBM")
#assetPrice=IBM[,1]
#iClick.VisAssetPrice(assetPrice)
**Description**

This GUI conducts plots of daily asset returns, including ACF, PACF, drawdowns, and Taylor effects.

**Usage**

```r
iclick.VisOneReturns(dat)
```

**Arguments**

- `dat` Time series object, xts.

**Details**

This GUI is designed for financial time series, mainly daily stock returns. Other time series data works also, as long as it has a date column.

**Value**

Output GUI

**Author(s)**

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**Examples**

```r
data("world20")
y=na.omit(diff(log(world20[,1])))

## Simulation data
dat=rnorm(200,5,1)
#y=ts(dat, start = c(1970, 1), frequency = 12)
iclick.VisOneReturns(y)
```
Description

This function is within the iClick GUI, is executed within iClick.VisOneReturns(dat), the data frame dat has two columns, the first column is date index and the second one is numeric time series data.

Usage

```r
qqnormPlotX(x, labels = TRUE, col = "indianred2", pch = 19,
       title = TRUE, mtext = TRUE, grid = FALSE, rug = TRUE,
       scale = TRUE)
```

Arguments

- `x`: A timeSeries object, single time series returns.
- `labels`: Whether to generate label for the graph.
- `col`: String for color.
- `pch`: Line options.
- `title`: Whether to generate title for the graph.
- `mtext`: Whether to generate main text for the graph.
- `grid`: Whether to use grid in plot.
- `rug`: Whether to add rug.
- `scale`: Whether to scale the data.

Details

This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.

Value

Plot

Author(s)

Ho Tsung-wu <tsungwu@ntnu.edu.tw>, College of Management, National Taiwan Normal University

See Also

Functions in fBasics.
Description

Daily returns data of 24 world national market index, 2001/1/03~2013/9/24

Usage

data("returnsDaily24")

Format

A data frame with 3320 observations on the following 24 variables.

dates Time string
AEX a numeric vector of national market
AORD a numeric vector of national market
ATX a numeric vector of national market
BFX a numeric vector of national market
BVSP a numeric vector of national market
FCHI a numeric vector of national market
FTSE a numeric vector of national market
FTSEMIB.MI a numeric vector of national market
GD.AT a numeric vector of national market
GDAXI a numeric vector of national market
GSPC a numeric vector of national market
GSPTSE a numeric vector of national market
HSI a numeric vector of national market
JKSE a numeric vector of national market
KLSE a numeric vector of national market
KS11 a numeric vector of national market
MERV a numeric vector of national market
MXX a numeric vector of national market
N225 a numeric vector of national market
OMX a numeric vector of national market
SSEC a numeric vector of national market
SSMI a numeric vector of national market
STI a numeric vector of national market
TWII a numeric vector of national market
Details

Daily stock returns of 24 world national markets.

Source

Yahoo finance.

seriesPlotX

Plot Time Series Data

Description

This function is within the iClick GUI, is executed within iClick.VisOneReturns(dat), the data frame dat has two columns, the first column is date index and the second one is numeric time series data.

Usage

seriesPlotX(x, labels=TRUE, type="l", col="indianred2", ylab="Value", title=TRUE, grid=TRUE, box=TRUE, rug=TRUE)

Arguments

- x: A timeSeries object, single time series returns.
- labels: Whether to generate label for the graph.
- type: Type of graph.
- col: Options for color.
- ylab: String label for Y axis.
- title: Whether to generate title for the graph.
- grid: Whether to generate grid for the graph.
- box: Whether to put the plot into a box.
- rug: Whether to add rug.

Details

This function is an internal function of iClick GUI, which is executed on iClick.VisOneReturns GUI.

Value

Plot

Author(s)

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VIF_no  

**See Also**

fBasics

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### VIF_no

**VIF test for multicolinearity**

**Description**

This function tests for multicolinearity.

**Usage**

```r
VIF_no(obj)
```

**Arguments**

- `obj` A lm object

**Details**

This function is an internal function of iClick GUI, which is executed on iClick.lm GUI.

**Value**

Test statistic

**Author(s)**

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---

### world20

**Close Price Data of twenty national market indices**

**Description**


**Usage**

```r
data("world20")
```

**Format**

A xts object with 2518 observations of twenty national market indices.
Details

A xts object with 2518 observations of twenty national market indices.

Source

Yahoo finance.
Index

boxPlotX, 2

calendarHeat, 3
cumulatedPlotX, 4
cutAndStack, 5
drawdownPlotX, 6
drawupPlotX, 7
drawups, 8

FFplusMOM, 8

IBM, 9
iClick (iClick-package), 2
iClick-package, 2
iClick.ARIMA, 10
iClick.GARCH, 11
iClick.lm, 13
iClick.VisAssetPrice, 14
iClick.VisOneReturns, 15

qqnormPlotX, 16

returnsDaily24, 17

seriesPlotX, 18

VIF_no, 19

world20, 19