

Package ‘M3FORA’

February 11, 2018

Title Data from the M3-Competition

Description The 3003 time series from the IJF-M3 competition (Makridakis and Hibon, 2000) and M3 Data with Rolling-Origin and Interval Forecasts

Version 1.0

Depends R (≥ 2.10), forecast (≥ 8.0)

Imports dygraphs, forecast, zoo, xts

Authors Andrey Davydenko, Maxim Shcherbakov and Sai Van Cuong from Volgograd State Technical University

Maintainer Sai Van Cuong <svcuonghvktqs@gmail.com>

License GPL-3

URL <https://github.com/svcuonghvktqs/M3FORA>

VignetteBuilder knitr

RoxygenNote 6.0.1

Encoding UTF-8

LazyData true

R topics documented:

M3FORA-package	2
M3Arima	2
M3Month	3
M3Other	4
M3Quart	5
M3Year	6
plot.xts	7
Index	9

M3FORA-package

*Data from the M3-competition***Description**

The 3003 time series from the IJF-M3 competition (Makridakis and Hibon, 2000) and M3 Data with Rolling-Origin and Interval Forecasts

Details

Package: M3FORA
 Type: Package
 License: GPL3

Author(s)

Andrey Davydenko, Maxim Shcherbakov and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvktqs/M3FORA>.

M3Arima

*M3-Competition forecasting data***Description**

The forecast with interval forecasts of time series of M3-Competition obtained using arima model

Usage

M3Arima

Format

M3Arima is a data frame of forecasts with interval forecasts with the following structure:

series Name of the series

method Name of the forecasting method

forecast The forecast values obtained from ARIMA forecasting method for each time series from M3-Competition data

Lo80 The lower value for confidence level 0.8

Hi80 The upper value for confidence level 0.8

Lo95 The lower value for confidence level 0.95

Hi95 The upper value for confidence level 0.95

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvktqs/M3FORA>.

See Also

[plot.ts](#)

Examples

```
M3Arima[1:20,]
```

M3Month	<i>M3-Competition monthly data</i>
---------	------------------------------------

Description

The monthly time series from the M3 forecasting competition.

Usage

```
M3Month
```

Format

M3 is a list of 2 data.frames of 1428 monthly time series from M3-Competition.

First list element is the data.frame with the following structure:

series Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

value A time series (the historical data(training data) + the future data (test data))

timesatmp The timestamp of series (monthly period)

Second list element is the data.frame with the following structure:

serie Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

actual The future data (test data) or actual values of each time series from M3-Competition monthly data

method The forecasting methods for each time series from M3-Competition monthly data

forecast The forecast values of future from difference forecasting methods for each time series from M3-Competition monthly data

horizon The forecast horizons for each time series from M3-Competition monthly data

timesatmp The timestamp of series (monthly period)

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvktqs/M3FORA>.

See Also

[plot.ts](#)

Examples

```
M3Month[[1]][1:5,]
M3Month[[2]][1:5,]
subset(M3Month[[1]], series == "M1")
subset(M3Month[[2]], method == "HOLT")
plot.ts(M3Month, series_id = "M1")
```

M3Other

M3-Competition other data

Description

The other time series from the M3 forecasting competition.

Usage

```
M3Other
```

Format

M3 is a list of 2 data.frames of 174 other time series from M3-Competition.

First list element is the data.frame with the following structure:

series Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

value A time series (the historical data(training data) + the future data (test data))

timesatmp The timestamp of series (other period)

Second list element is the data.frame with the following structure:

serie Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

actual The future data (test data) or actual values of each time series from M3-Competition other data

method The forecasting methods for each time series from M3-Competition other data

forecast The forecast values of future from difference forecasting methods for each time series from M3-Competition other data

horizon The forecast horizons for each time series from M3-Competition other data

timesatmp The timestamp of series (other period)

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvktqs/M3FORA>.

See Also

[plot.ts](#)

Examples

```
M3Other[[1]][1:5,]
M3Other[[2]][1:5,]
subset(M3Other[[1]], series == "01")
subset(M3Other[[2]], method == "HOLT")
plot.ts(M3Other, series_id = "01")
```

M3Quart	<i>M3-Competition quarterly data</i>
---------	--------------------------------------

Description

The quarterly time series from the M3 forecasting competition.

Usage

```
M3Quart
```

Format

M3 is a list of 2 data.frames of 756 quarterly time series from M3-Competition.

First list element is the data.frame with the following structure:

series Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

value A time series (the historical data(training data) + the future data (test data))

timesatmp The timestamp of series (quarterly period)

Second list element is the data.frame with the following structure:

serie Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

actual The future data (test data) or actual values of each time series from M3-Competition quarterly data

method The forecasting methods for each time series from M3-Competition quarterly data

forecast The forecast values of future from difference forecasting methods for each time series from M3-Competition quarterly data

horizon The forecast horizons for each time series from M3-Competition quarterly data

timestamp The timestamp of series (quarterly period)

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvkts/M3FORA>.

See Also

[plot.ts](#)

Examples

```
M3Quart[[1]][1:5,]
M3Quart[[2]][1:5,]
subset(M3Quart[[1]], series == "Q1")
subset(M3Quart[[2]], method == "HOLT")
plot.ts(M3Quart, series_id = "Q1")
```

M3Year

M3-Competition yearly data

Description

The yearly time series from the M3 forecasting competition.

Usage

M3Year

Format

M3 is a list of 2 data.frames of 645 yearly time series from M3-Competition.

First list element is the data.frame with the following structure:

series Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

value A time series (the historical data(training data) + the future data (test data))

timesatmp The timestamp of series (yearly period)

Second list element is the data.frame with the following structure:

serie Name of the series

category The category of series. Possible values for M3 are "DEMOGRAPHIC", "FINANCE", "INDUSTRY", "MACRO", "MICRO", "OTHER".

actual The future data (test data) or actual values of each time series from M3-Competition yearly data

method The forecasting methods for each time series from M3-Competition yearly data

forecast The forecast values obtained from difference forecasting methods for each time series from M3-Competition yearly data

horizon The forecast horizons for each time series from M3-Competition yearly data

timesatmp The timestamp of series (yearly period)

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

Source

<https://github.com/svcuonghvkts/M3FORA>.

See Also

[plot.ts](#)

Examples

```
M3Year[[1]][1:5,]
M3Year[[2]][1:5,]
subset(M3Year[[1]], series == "Y1")
subset(M3Year[[2]], method == "HOLT")
plot.ts(M3Year, series_id = "Y1")
```

plot.xts

Plotting M Competition data with forecasts obtained from difference forecasting methods

Description

Functions to plot a time series from the M competition data sets, showing both the training and test sections of the series with forecasts obtained from difference forecasting methods .

Usage

```
## S3 method for class 'xts'
plot(x, si, method = NULL)
```

Arguments

x	The dataset of M-competition data in list format as M3Year, M3Quart, M3Month and M3Other
si	Name of a time series
method	Name or vector of names of forecasting methods

Value

plot.ts returns a dygraphs object. This function produces a time series plot of the selected series with forecast obtained from difference forecasting methods.

Author(s)

Andrey Davydenko, Maxim and Sai Van Cuong from Volgograd State Technical University

See Also

[M3Year](#), [M3Quart](#), [M3Month](#), [M3Other](#), [M3Arima](#)

Examples

```
plot.ts(M3Year, si = "Y1")
plot.ts(M3Year, si = "Y1", method = c("HOLT", "SINGLE", "NAIVE2"))

plot.ts(M3Quart, si = "Q4")
plot.ts(M3Quart, si = "Q4", method = c("HOLT", "SINGLE", "NAIVE2"))

plot.ts(M3Month, si = "M598")
plot.ts(M3Month, si = "M598", method = c("HOLT", "SINGLE", "NAIVE2"))

plot.ts(M3Other, si = "O15")
plot.ts(M3Other, si = "O15", method = c("HOLT", "SINGLE"))
plot.ts(M3Other, si = "O15", method = c("HOLT", "SINGLE", "NAIVE2"))
```


Index

*Topic **datasets**

- M3Arima, [2](#)
- M3Month, [3](#)
- M3Other, [4](#)
- M3Quart, [5](#)
- M3Year, [6](#)

*Topic **dygraphs**

- plot.xts, [7](#)

*Topic **objects**

- plot.xts, [7](#)

*Topic **package**

- M3FORA-package, [2](#)

M3Arima, [2](#), [8](#)

M3FORA (M3FORA-package), [2](#)

M3FORA-package, [2](#)

M3Month, [3](#), [8](#)

M3Other, [4](#), [8](#)

M3Quart, [5](#), [8](#)

M3Year, [6](#), [8](#)

plot.ts, [3–7](#)

plot.xts, [7](#)