Package 'disagmethod'

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Type Package

Title Autoregressive Integrated Moving Average (ARIMA) Based Disaggregation Methods

Version 0.1.0

Description We have the code for disaggregation as found in Wei and Stram (1990, <doi:10.1111/j.2517-6161.1990.tb01799.x>), and Hodgess and Wei (1996, ``Temporal Disaggregation of Time Series'' in Statistical Science I, Nova Publishing). The disaggregation models have different orders of the moving average component. These are based on ARIMA models rather than differencing or using similar time series.

Depends R (>= 4.5), polynom, ltsa, zoo, xts, tsbox,tswge

License GPL-2 | GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

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Contents

lower3 *Lower Bound Disaggregation Method Function*

Description

This uses the Lower Bound method for temporal disaggregation of time series

Usage

```
lower3(x, m = 1)
```

Arguments

x	Aggregate Series; must be a ts, xts, or zoo object
m	order of disaggregation; 3, 4, 12

Details

This function uses the lower bound method found in Hodgess and Wei (1996, "Temporal Disaggregation of Time Series"). We fit an aggregate (p,d,q) model, and produce a disaggregate model of (p,d,0). We generate the disaggregate series based on the disaggregate model.

Value

bigy	order of the disaggregate model
fin1	final disaggregate series

Author(s)

Erin Hodgess

References

Hodgess and Wei (1996, "Temporal Disaggregation of Time Series"), in M. Ahsanullah and D. Bhoj (Eds), "Applied Statistical Science I".

Examples

```
library(tswge)
data(tx.unemp.adj)
#Monthly seasonally adjusted Texas unemployment data
#Create a quarterly sum
my.un.q <- aggregate(tx.unemp.adj,nfreq=4)
e.low <- lower3(my.un.q,3)
sum(e.low$fin1[1:3])
my.un.q[1]
```

upper3 *Upper Bound Disaggregation Method Function*

Description

This uses the Upper Bound method for temporal disaggregation of time series

Usage

```
upper3(x, m = 1)
```

Arguments

x	Aggregate Series; must be a ts, xts, or zoo object
m	order of disaggregation; 3, 4, 12

Details

This function uses the upper bound method found in Hodgess and Wei (1996, "Temporal Disaggregation of Time Series"). We fit an aggregate (p,d,q) model, and produce a disaggregate model of (p,d,(p+d)). We generate the disaggregate series based on the disaggregate model.

Value

bigy	order of the disaggregate model
fin1	final disaggregate series

Author(s)

Erin Hodgess

References

Hodgess and Wei (1996, "Temporal Disaggregation of Time Series"), in M. Ahsanullah and D. Bhoj (Eds), "Applied Statistical Science I".

Examples

```
library(tswge)
data(tx.unemp.adj)
#Monthly seasonally adjusted Texas unemployment data
#Create a quarterly sum
my.un.q <- aggregate(tx.unemp.adj,nfreq=4)
e.upp <- upper3(my.un.q,3)
sum(e.upp$fin1[1:3])
my.un.q[1]
```

`weidis3` *Wei Stram Disaggregation Method Function*

Description

This uses the Wei Stram method for temporal disaggregation of time series

Usage

```
weidis3(x, m = 1)
```

Arguments

`x`	Aggregate Series; must be a ts, xts, or zoo object
`m`	order of disaggregation; 3, 4, 12

Details

This function uses the method found in Wei and Stram (1990, <doi:10.1111/j.2517-6161.1990.tb01799.x>). We fit an aggregate (p,d,q) model, and produce a disaggregate model of (p,d,(p+d+1)). We generate the disaggregate series based on the disaggregate model.

Value

`bigy`	order of the disaggregate model
`fin1`	final disaggregate series

Author(s)

Erin Hodgess

References

Wei and Stram (1990, <doi:10.1111/j.2517-6161.1990.tb01799.x>)

Examples

```
library(tswge)
data(tx.unemp.adj)
#Monthly seasonally adjusted Texas unemployment data
#Create a quarterly sum
my.un.q <- aggregate(tx.unemp.adj,nfreq=4)
e.wei <- weidis3(my.un.q,3)
sum(e.wei$fin1[1:3])
my.un.q[1]
```

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