Package 'GLSUnitRootTests'

November 5, 2023

Guris_Guris_2022			
Version 0.1.0 Author Burak Guris bguris@istanbul.edu.tr> Maintainer Burak Guris bguris@istanbul.edu.tr> Description Function and data sets in the book chapter entitled ``Unit Root Tests based on GLS Estimator" B.Guris (2023). The book will be published in Turkish and the original name of this book chapter will be ``Genelleştirilmiş En Küçük Kareler Tahmincisine Dayanan Birim Kök Testleri". License GPL (>= 2) Encoding UTF-8 LazyData true RoxygenNote 7.2.3 Imports NonlinearTSA R topics documented: GLS_ADF. Guris_Guris_2022. Kapetanios_Shin_2008 Su_Nguyen_2013. Tr_inf_rate.	Type Package		
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LazyData true RoxygenNote 7.2.3 Imports NonlinearTSA R topics documented: GLS_ADF. Guris_Guris_2022. Kapetanios_Shin_2008 Su_Nguyen_2013 Tr_inf_rate	License GPL (>= 2)		
RoxygenNote 7.2.3 Imports NonlinearTSA R topics documented: GLS_ADF. Guris_Guris_2022. Kapetanios_Shin_2008 Su_Nguyen_2013. Tr_inf_rate.	Encoding UTF-8		
Imports NonlinearTSA R topics documented: GLS_ADF. Guris_Guris_2022. Kapetanios_Shin_2008 Su_Nguyen_2013 Tr_inf_rate	LazyData true		
GLS_ADF	RoxygenNote 7.2.3		
GLS_ADF . Guris_Guris_2022 . Kapetanios_Shin_2008 . Su_Nguyen_2013 . Tr_inf_rate .	Imports NonlinearTSA		
Index	GLS_ADF Guris_Guris_2022 Kapetanios_Shin_2008 Su_Nguyen_2013 Tr_inf_rate		
	Index	6	
GLS_ADF Elliott, Rothenberg ve Stock(1996) GLS detrending in ADF unit root test function			

Description

This function allows you to make Elliott, Rothenberg ve Stock(1996) GLS detrending method for the unit root test procedure developed by Dickey and Fuller(1981).

2 Guris_Guris_2022

Usage

```
GLS_ADF(data_name, case, max_lag, lsm)
```

Arguments

data_name series name,

case if demeaned data 1 if detrended data 2,

max_lag maximum lag

1sm lag selection methods if 1 AIC, if 2 BIC

Value

"Model" Estimated model

"Selected lag" the lag order

"Test Statistic" the value of the test statistic

References

Elliott, G., T. J. Rothenberg, and J. H. Stock. 1996. Efficient tests for an autoregressive unit root. Econometrica 64 (4):813–36.

Burak Guris, R Uygulamalı Dogrusal Olmayan Zaman Serileri Analizi, DER Yayinevi, 2020.

Examples

```
x <- rnorm(1000)
GLS_ADF(x, case = 1, lags = 6, lsm =1)
y <- cumsum(rnorm(1000))
GLS_ADF(y, 1, 3, 3)</pre>
```

Guris_Guris_2022

Guris and Guris(2022) GLS detrending in nonlinear unit root test function

Description

This function allows you to make Güriş and Güriş GLS detrending method for the unit root test procedure developed by Kruse 2011. A new unit root test against ESTAR based on a class of modified statistics. Statistical Papers 52 (1):71–85.

Usage

```
Guris_Guris_2022(data_name, case, lags, lsm)
```

Kapetanios_Shin_2008

Arguments

data_name series name,

case if demeaned data 1 if detrended data 2,

lags maximum lag

1sm lag selection methods if 1 AIC, if 2 BIC, if 3 t-stat significance

Value

"Model" Estimated model

"Selected lag" the lag order

"Test Statistic" the value of the test statistic

References

Kruse 2011. A new unit root test against ESTAR based on a class of modified statistics. Statistical Papers 52 (1):71–85.

Burak Guris, R Uygulamalı Dogrusal Olmayan Zaman Serileri Analizi, DER Yayinevi, 2020.

Examples

```
x <- rnorm(1000)
Guris_Guris_2022(x, case = 1, lags = 6, lsm =1)
y <- cumsum(rnorm(1000))
Guris_Guris_2022(y, 1, 3, 3)</pre>
```

Kapetanios_Shin_2008 Kapetanios and Shin(2008) GLS detrending in KSS(2003) nonlinear unit root test function

Description

This function allows you to make Kapetanios and Shin(2008) GLS detrending method for the unit root test procedure developed by Kapetanios, Shin and Snell(2003).

Usage

```
Kapetanios_Shin_2008(data_name, case, lags, lsm)
```

Arguments

data_name series name,

case if demeaned data 1 if detrended data 2,

lags maximum lag

1sm lag selection methods if 1 AIC, if 2 BIC, if 3 t-stat significance

Su_Nguyen_2013

Value

```
"Model" Estimated model
```

"Selected lag" the lag order

"Test Statistic" the value of the test statistic

References

Kapetanios, G., Shin, Y., & Snell, A. (2003). Testing for a unit root in the nonlinear STAR framework. Journal of econometrics, 112(2), 359-379.

Burak Guris, R Uygulamalı Dogrusal Olmayan Zaman Serileri Analizi, DER Yayinevi, 2020.

Examples

```
x <- rnorm(1000)
Kapetanios_Shin_2008(x, case = 1, lags = 6, lsm =1)
y <- cumsum(rnorm(1000))
Kapetanios_Shin_2008(y, 2, 12, 2)</pre>
```

Su_Nguyen_2013

Su and Nguyen(2013) GLS detrending in Sollis nonlinear unit root test function

Description

This function allows you to make Su and Nguyen(2013) GLS detrending method for the unit root test procedure developed by Kruse 2009.

Usage

```
Su_Nguyen_2013(data_name, case, lags, lsm)
```

Arguments

data_name series name,

case if demeaned data 1 if detrended data 2,

lags maximum lag

1sm lag selection methods if 1 AIC, if 2 BIC, if 3 t-stat significance

Value

"Model" Estimated model

"Selected lag" the lag order

"Test Statistic" the value of the test statistic

Tr_inf_rate 5

References

Jen-Je Su & Jeremy K. Nguyen (2013) GLS detrending in Sollis nonlinear unit root tests, Applied Economics Letters, 20:13, 1259-1262

Burak Guris, R Uygulamalı Dogrusal Olmayan Zaman Serileri Analizi, DER Yayinevi, 2020.

Examples

```
x <- rnorm(1000)
Su_Nguyen_2013(x, case = 2, lags = 3, lsm = 2)
y <- cumsum(rnorm(1000))
Su_Nguyen_2013(y, 1, 12, 1)</pre>
```

Tr_inf_rate

Tr_inf_rate

Description

Monthly time series data between 01.2005 - 10.2023

Usage

```
Tr_inf_rate
```

Format

A data frame containing: Inflation Rate in Turkey

Source

The Central Bank of the Republic of Turkey

Examples

```
summary(Tr_inf_rate)
```

Index

```
* GLS
    GLS_ADF, 1
    Guris_Guris_2022, 2
    Kapetanios_Shin_2008, 3
    Su_Nguyen_2013, 4
* datasets
    Tr_inf_rate, 5
* nonlinear
    GLS_ADF, 1
    Guris_Guris_2022, 2
    Kapetanios_Shin_2008, 3
    Su_Nguyen_2013, 4
* root
    GLS_ADF, 1
    Guris_Guris_2022, 2
    Kapetanios_Shin_2008, 3
    Su_Nguyen_2013, 4
* test
    GLS_ADF, 1
    Guris_Guris_2022, 2
    Kapetanios_Shin_2008, 3
    Su_Nguyen_2013, 4
* unit
    GLS_ADF, 1
    Guris_Guris_2022, 2
    Kapetanios_Shin_2008, 3
    Su_Nguyen_2013, 4
GLS_ADF, 1
Guris_Guris_2022, 2
Kapetanios_Shin_2008, 3
Su_Nguyen_2013, 4
Tr_inf_rate, 5
```