Package 'SignTestsDufour'

January 30, 2021

Title Exact Nonparametric Sign and Signed Rank Tests

Version 1.0.0

Description This package contains the exact sign, signed rank and point-optimal sign-based tests of Professor. Jean-Marie Dufour and his coauthors. The tests are exact, distribution-free and robust against heteroskedasticity of unknown form. Moreover, within a predictive regression framework, said tests are valid (control size for any given sample size), in the presence of highly persistent/endogeneous regressors.

Imports MASS, caTools, purrr

License GPL (>= 3)

Encoding UTF-8

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.1.9000

NeedsCompilation no

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R topics documented:

CD_95 *Signed and Sign Ranked Tests of Campbell and Dufour (1995)*

Description

This function provides the test statistic and the critical value for the nonparametric sign-based and sign-ranked tests proposed by Campbell and Dufour (1995). These tests are valid in the presence of a single regressor and no nuisance parameters (i.e. intercept).

Usage

```
CD_95(y, x, level = 0.05, p = 0.5, W = FALSE, SR = FALSE)
```

Arguments

y	the vector of dependent variables
x	the vector of regressors
level	is the level of the test. Default value is 0.05.
p	is the success probability of the binomial distribution for each trial. Default value is 0.5.
W	includes the Wilcoxon signed rank test variate when set to TRUE.
SR	includes another signed rank test variate proposed by Campbell and Dufour (1995) when set to TRUE.

Examples

```
CD_95(y,x)
```

CD_97 *Signed and Sign Ranked Tests of Campbell and Dufour (1997)*

Description

This function provides the nonparametric sign-based and sign-ranked tests using bound-type procedures in the presence of a nuistance parameter, that have been proposed by Campbell and Dufour (1997). These tests are valid in the presence of a single regressor and a nuisance parameters (i.e. intercept).

Usage

```
CD_97(y, x, level = 0.05, alpha_1 = 0.14 * level, p = 0.5, SR = FALSE)
```

Arguments

y	the vector of dependent variables
x	the vector of regressors
level	the level of the test. Default value is 0.05.
alpha_1	for the bound-type procedure. Default value is 0.007.
p	the success probability of the binomial distribution for each trial. Default value is 0.5.
SR	includes another signed rank test variate proposed by Campbell and Dufour (1995) when set to TRUE.

Examples

```
CD_97(y,x)
```

POS_Fix *Point-Optimal Sign-Based Tests of Dufour and Taamouti (2010)*

Description

This function provides the test statistic and the critical value for the nonparametric point-optimal sign-based tests proposed by Dufour and Taamouti (2010). The proposed tests are valid in the presence of a vector of fixed regressors.

Usage

```
POS_Fix(y, x, null = c(0, 0), level = 0.05, p = 0.5, B = 10000, ...)
```

Arguments

y	the vector of dependent variables
x	the vector of regressors
null	the null hypothesis
level	is the level of the test. Default value is 0.05.
p	is the success probability of the binomial distribution for each trial. Default value is 0.5.
B	is the number iterations for simulating the

Examples

```
POS_Fix(y,x)
```

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