Package 'normwhn.test'

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Type Package

Title Normality and White Noise Testing

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Author Peter Wickham

Maintainer Peter Wickham <peterwickham@mac.com>

Description Includes Omnibus Univariate and Multivariate Normality Tests (See Doornik and Hansen (1994)). One variation allows for the possibility of weak dependence rather than independence in the variable(s). Also included is an univariate white noise test where the null hypothesis is ``white noise'' rather than strict ``white noise''.

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normwhn.test-package *Normality and White Noise Testing*

Description

Multivariate and Univariate Normality Tests (See Doornik and Hansen (1994)). Also a Univariate Test for White Noise (See Lobato and Velasco (2004))

Details

Package:	normwhn.test
Type:	Package
Version:	1.0
Date:	2010-08-02
License:	GPL-3

Author(s)

Peter Wickham Maintainer: Peter Wickham <peterwickham@mac.com

References

Doornik, J.A., and H. Hansen (1994). "An Omnibus Test for Univariate and Multivariate Normality", Working Paper, Nuffield College, Oxford University, U.K. Lobato, I., and C. Velasco (2004). "A Simple Test of Normality of Time Series", Econometric Theory, 20, pp. 671-689, Cambridge University Press. Lobato, I., and C. Velasco (2004). "A Simple and General Test for White Noise", Econometric Society, Latin-America Meetings, Paper No. 112

normality.test1 *Omnibus Normality Test with Independence*

Description

Performs the Doornik-Hansen (1994) Omnibus Test for Normality

Usage

```
normality.test1(x)
```

Arguments

x	Input matrix by row n (observations) and column p (variables)

Details

In the univariate case, the input matrix is row n (observations) by 1

Value

A list with class `htest` containing the following components:

`sk`	skewness statistics
`k`	kurtosis statistics
`rtb1`	skewness of standardized variables
`b2`	kurtosis of standardized variables
`z1`	skewness of transformed variables
`z2`	kurtosis of transformed variables
`pvalsk`	p-values under null of no skewness
`pskneg`	p-values under null of no negative skewness
`pskpos`	p-values under null of no positive skewness
`pvalk`	p-values under null of no kurtosis
`pkneg`	p-values under null of no negative kurtosis
`pkpos`	p-values under null of no positive kurtosis
`Ep`	value of the normality test statistic
`dof`	degrees of freedom
`Sig.Ep`	significance of normality test statistic

Note

The test is designed to deal with small samples rather than the asymptotic version commonly-known as the Jarque-Bera test

Author(s)

Peter Wickham

References

Doornik, J.A., and H. Hansen (1994). "An Omnibus Test for Univariate and Multivariate Normality", Working Paper, Nuffield College, Oxford University, Oxford, U.K

See Also

normality.test2

`normality.test2` *Omnibus Normality Test under Weak Dependence*

Description

Perform the Doornik-Hansen Test for Normality with allowance for the variable(s) being weakly dependent rather than independent. The test was implicitly suggested by Lobato and Velasco (2004).

Usage

```
normality.test2(x)
```

Arguments

`x`	Input matrix by row n (observations) and column p (variables)

Details

In the univariate case, the input matrix is row n (observations) by 1

Value

A list with class `htest` containing the following components:

`sk`	skewness statistics
`k`	kurtosis statistics
`rtb1`	skewness of standardized variables
`b2`	kurtosis of standardized variables
`z1`	skewness of transformed variables
`z2`	kurtosis of transformed variables
`pvalsk`	p-values under null of no skewness
`pskneg`	p-values under null of no negative skewness
`pskpos`	p-values under null of no positive skewness
`pvalk`	p-values under null of no kurtosis
`pkneg`	p-values under null of no negative kurtosis
`pkpos`	p-values under null of no positive kurtosis
`Ep`	value of the normality test statistic
`dof`	degrees of freedom
`Sig.Ep`	significance of normality test statistic

Author(s)

Peter Wickham

References

Doornik, J.A., and H. Hansen (1994). "An Omnibus Test for Univariate and Multivariate Normality", Working Paper, Nuffield College, Oxford University, U.K. Lobato, I., and C. Velasco (2004). "A Simple Test of Normality of Time Series", Econometric Theory, 20, pp. 671-689, Cambridge University Press.

See Also

normality.test1

`whitenoise.test` *Univariate Test for White Noise*

Description

Performs an Univariate Test for White Noise. The null is white noise rather than "strict" white noise, thus permitting weak dependence in the higher moments of the variable.

Usage

```
whitenoise.test(x)
```

Arguments

`x`	the input is a vector of length n (observations) or a n by 1 matrix

Details

A von Mises-type statistic is computed to be valued against a N(0,4) distribution. Finite sample test statistics are thus easily generated.

Value

A list with class `htest` containing the following components:

`n`	no. of observations
`T`	length of periodogram used
`MN`	von Mises statistic
`tMN`	test statistic
`test value`	p-value for the test

Author(s)

Peter Wickham

References

Lobato, I., and C. Velasco (2004). "A Simple and General Test for White Noise", Econometric Society, Latin-America Meetings, Paper No. 112.

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