

NDK_CLOGLOG

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- C/C++
- .Net

```
int __stdcall NDK_CLOGLOG(double * X,  
                          size_t  N,  
                          WORD    retTYpe  
                          )
```

Computes the complementary log-log transformation, including its inverse.

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See [Macros](#) for full list.

Parameters

[in, out] **X** is the univariate time series data (a one dimensional array).

[in] **N** is the number of observations in X.

[in] **retTYpe** is a number that determines the type of return value: 1 (or missing)=C-log-log, 2=inverse C-log-log.

Remarks

1. The complementary log log link function is commonly used for parameters that lie in the unit interval.
2. The complementary **log log link/transformation** is defined as follows: $y = \text{CLogLog}(x) = \ln \left(-\ln \left(1 - x \right) \right)$ And $x = \text{CLogLog}^{-1}(y) = 1 - e^{-e^y}$ Where:
 - $x_{\{t\}}$ is the value of the input time series at time $\{t\}$
 - $y_{\{t\}}$ is the transformed complementary log-log value at time $\{t\}$
 - $\text{CLogLog}^{-1}(y)$ is the inverse complementary **log log link** function
 - $\left(x_{\{t\}} + \alpha \right) > 0$ for all t values
3. The BOXCOX function accepts a single value or an array of values for X.
4. The shift parameter must be large enough to make all the values of X positive.

Requirements

Header	SFSDK.H

Library	SFSDK.LIB
DLL	SFSDK.DLL

Examples

```
int NDK_CLOGLOG(double[] pData,
                UIntPtr nSize,
                short argRetType
                )
```

Namespace: NumXLAPI
Class: SFSDK
Scope: Public
Lifetime: Static

Computes the complementary log-log transformation, including its inverse.

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See [Macros](#) for full list.

Parameters

[in,out] **pData** is the univariate time series data (a one dimensional array).

[in] **nSize** is the number of observations in pData.

[in] **argRetType** is a number that determines the type of return value: 1 (or missing)=C-log-log , 2=inverse C-log-log.

Remarks

- The complementary log log link function is commonly used for parameters that lie in the unit interval.
- The complementary **log log link/transformation** is defined as follows: $y = \text{CLogLog}(x) = \ln\left(-\ln\left(1-x\right)\right)$ And $x = \text{CLogLog}^{-1}(y) = 1 - e^{-e^y}$ Where:
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 - $\left(x_{\{t\}} + \alpha\right) > 0$ for all t values
- The BOXCOX function accepts a single value or an array of values for X.
- The shift parameter must be large enough to make all the values of X positive.

Exceptions

Exception Type	Condition
None	N/A

Requirements

Namespace	NumXLAPI
Class	SFSDK
Scope	Public
Lifetime	Static
Package	NumXLAPI.DLL

Examples

References

Hamilton, J .D.; [Time Series Analysis](#) , Princeton University Press (1994), ISBN 0-691-04289-6

Tsay, Ruey S.; [Analysis of Financial Time Series](#) John Wiley & SONS. (2005), ISBN 0-471-690740

See Also

[template("related")]
