NDK_LOGIT

Last Modified on 01/06/2017 6:19 pm CST

- C/C++
- .Net

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

Computes the logit 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)=logit, 2=inverse logit.

Remarks

1. The **logit** link function is very commonly used for parameters that lie in the unit interval. Numerical values of theta close to 0 or 1 or out of range result in #VALUE! or #N/A.
2. The **logit** transformation is defined as follows: \[y=\textit{Logit}(x)=\ln{\frac{x}{1-x}}\] And \[x=\textit{Logit}^{-1}(y)=\frac{e^y}{e^y+1}\] Where:
   - \(x_{t}\) is the input value of the input time series at time \(t\). X must be between 0 and 1, exclusive
   - \(y_{t}\) is the transformed **logit** value at time \(t\)
   - \(\textit{Logit}^{-1}\) is the inverse logit transformation
3. The **logit** function accepts a single value or an array of values for X.

Requirements

Header	SFSDK.H
Library	SFSDK.LIB

DLL	SFSDK.DLL

Examples

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

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

Computes the logit 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)=logit, 2=inverse logit.

Remarks

1. The **logit** link function is very commonly used for parameters that lie in the unit interval. Numerical values of theta close to 0 or 1 or out of range result in #VALUE! or #N/A.
2. The **logit** transformation is defined as follows: \[y=\textit{Logit}(x)=\ln{\frac{x}{1-x}}\] And \[x=\textit{Logit}^{-1}(y)=\frac{e^y}{e^y+1}\] Where:
   - \(x_{t}\) is the input value of the input time series at time \(t\). X must be between 0 and 1, exclusive

- y_{t} is the transformed **logit** value at time t
- $\textit{Logit}^{-1}$ is the inverse logit transformation

3. The **logit** function accepts a single value or an array of values for X.

Exceptions

Exception Type	Condition
None	N/A

Requirements

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

Examples

References

* John H. Aldrich, Forrest D. Nelson; Linear Probability, Logit, and Probit Models; SAGE Publications, Inc; 1st Edition(Nov 01, 1984), ISBN: 0803921330

* 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

* D. S.G. Pollock; Handbook of Time Series Analysis, Signal Processing, and Dynamics; Academic Press; Har/Cdr edition(Nov 17, 1999), ISBN: 125609906

* Box, Jenkins and Reisel; Time Series Analysis: Forecasting and Control; John Wiley & SONS.; 4th edition(Jun 30, 2008), ISBN: 470272848

See Also

[template("related")]