

NDK_QUANTILE

Last Modified on 04/15/2016 11:11 am CDT

- C/C++
- .Net

```
int __stdcall NDK_QUANTILE(double * X,  
                           size_t  N,  
                           double  p,  
                           double * retVal  
                           )
```

Returns the sample p-quantile of the non-missing observations (i.e. divides the sample data into equal parts determined by the percentage p).

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

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

Parameters

[in] **X** is the input data sample (a one dimensional array).

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

[in] **p** is a scalar value between 0 and 1 (exclusive).

[out] **retVal** is the calculated p-th quantile value.

Remarks

1. The time series may include missing values (NaN), but they will not be included in the calculations.
2. The quantile function for any distribution is defined between 0 and 1. Its function is the inverse of the cumulative distribution function (CDF).
3. The quantile function returns the sample median when $(p=0.5)$.
4. The quantile function returns the sample minimum when $(p=0)$.
5. The quantile function returns the sample maximum when $(p=1)$.
6. For any probability distribution, the following holds true for the probability (p) :
 - $(P(X < q) \geq p)$, where:
 - (q) is the sample (p) -quantile.

Requirements

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Header	SFSDK.H
Library	SFSDK.LIB
DLL	SFSDK.DLL

Examples

```
int NDK_QUANTILE(double[] pData,
                UIntPtr nSize,
                double argPct,
                ref double retVal
                )
```

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

Returns the sample p-quantile of the non-missing observations (i.e. divides the sample data into equal parts determined by the percentage p).

Return Value

a value from [NDK_RETCODE](#) enumeration for the status of the call.

NDK_SUCCESS operation successful

Error Error Code

Parameters

[in] **pData** is the input data sample (a one dimensional array).

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

[in] **argPct** is a scalar value between 0 and 1 (exclusive).

[out] **retVal** is the calculated p-th quantile value.

Remarks

1. The time series may include missing values (NaN), but they will not be included in the calculations.
2. The quantile function for any distribution is defined between 0 and 1. Its function is the inverse of the cumulative distribution function (CDF).
3. The quantile function returns the sample median when $(p=0.5)$.
4. The quantile function returns the sample minimum when $(p=0)$.
5. The quantile function returns the sample maximum when $(p=1)$.
6. For any probability distribution, the following holds true for the probability (p) :

- $\{P(X < q) \geq p\}$, where:
 - $\{q\}$ is the sample $\{p\}$ -quantile.

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")]
