NDK_AIRLINE_PARAM

Last Modified on 07/11/2016 11:27 am CDT

- C/C++
- .Net

```
int __stdcall NDK_AIRLINE_PARAM(double *          pData,
                                size_t            nSize,
                                double *          mean,
                                double *          sigma,
                                WORD              S,
                                double *          theta,
                                double *          theta2,
                                MODEL_RETVAL_FUNC retType,
                                size_t            maxIter
                               )
```

Returns an array of cells for the initial (non-optimal), optimal or standard errors of the model's parameters.

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,out] **mean** is the model mean (i.e. mu).

[in,out] **sigma** is the standard deviation of the model's residuals/innovations.

[in] **S** is the length of seasonality (expressed in terms of lags, where s > 1).

[in,out] **theta** is the coefficient of first-lagged innovation (see model description).

[in,out] **theta2** is the coefficient of s-lagged innovation (see model description

[in] **retType** is a switch to select the type of value returned: 1= Quick Guess, 2=Calibrated, 3= Std. Errors

Order	Description
1	Quick guess (non-optimal) of parameters values (default)
2	Calibrated (optimal) values for the model's parameters
3	Standard error of the parameters' values

[in] **maxIter** is the maximum number of iterations used to calibrate the model. If missing or less than 100, the default maximum of 100 is assumed.

Remarks

1. The underlying model is described **here.**
2. The time series is homogeneous or equally spaced
3. The time series may include missing values (e.g. NaN) at either end.
4. NDK_AIRLINE_PARAM returns an array of the values (or errors) of the model's parameters in the following order:
   - \(\mu\)
   - \(\theta\)
   - \(\Theta\)
   - \(\sigma\)
5. The AIRLINE_GUESS sets the \(\mu\) and \(\sigma\) equal to the differenced sample (i.e. \(Z_t=(1-L)(1-L^s)Y_t\)) average, and standard deviation respectively, and it sets the \(\theta = 0\) and \(\Theta=0\)

Requirements

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

Examples

```
int __stdcall NDK_AIRLINE_PARAM(double[]          pData,
                                UIntPtr           nSize,
                                ref double        mean,
                                ref double        sigma,
                                short             dSeason,
                                ref double        theta,
                                ref double        theta2,
                                MODEL_RETVAL_FUNC retType,
                                UIntPtr           maxIter
                               )
```

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

Returns an array of cells for the initial (non-optimal), optimal or standard errors of the model's parameters.

Return Value

a value from **NDK_RETCODE** enumeration for the status of the call.

NDK_SUCCESS operation successful
Error Error Code

Parameters

[in,out]	**pData**	is the univariate time series data (a one dimensional array).
[in]	**nSize**	is the number of observations in pData.
[in,out]	**mean**	is the model mean (i.e. mu).
[in,out]	**sigma**	is the standard deviation of the model's residuals/innovations.
[in]	**dSeason**	is the length of seasonality (expressed in terms of lags, where s > 1).
[in,out]	**theta**	is the coefficient of first-lagged innovation (see model description).
[in,out]	**theta2**	is the coefficient of s-lagged innovation (see model description
[in]	**retType**	is a switch to select the type of value returned: 1= Quick Guess, 2=Calibrated, 3= Std. Errors
[in]	**maxIter**	is the maximum number of iterations used to calibrate the model. If missing or less than 100, the default maximum of 100 is assumed.

Order	Description
1	Quick guess (non-optimal) of parameters values (default)
2	Calibrated (optimal) values for the model's parameters
3	Standard error of the parameters' values

Remarks

1. The underlying model is described **here.**
2. The time series is homogeneous or equally spaced
3. The time series may include missing values (e.g. NaN) at either end.
4. NDK_AIRLINE_PARAM returns an array of the values (or errors) of the model's parameters in the following order:
   - \(\mu\)
   - \(\theta\)
   - \(\Theta\)
   - \(\sigma\)
5. The AIRLINE_GUESS sets the \(\mu\) and \(\sigma\) equal to the differenced sample (i.e. \(Z_t=(1-L)(1-L^s)Y_t\)) average, and standard deviation respectively, and it sets the \(\theta = 0\) and \(\Theta=0\)

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")]