NDK_AIRLINE_FORE

Last Modified on 07/11/2016 11:16 am CDT

- C/C++
- .Net

```
int __stdcall NDK_AIRLINE_FORE(double *                pData,
                               size_t                  nSize,
                               double                  mean,
                               double                  sigma,
                               WORD                    S,
                               double                  theta,
                               double                  theta2,
                               size_t                  nStep,
                               FORECAST_RETVAL_FUNC    retType,
                               double                  alpha,
                               double *                retVal
                              )
```

Calculates the out-of-sample forecast statistics.

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See **Macros** for full list.

Parameters

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

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

[in] **mean** is the model mean (i.e. mu).

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

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

[in] **nStep** is the forecast time/horizon (expressed in terms of steps beyond end of the time series).

[in] **retType** is a switch to select the type of value returned

Order	Description
1	Mean forecast value (default)
2	Forecast standard error (aka local volatility)
3	Volatility term structure
4	Lower limit of the forecast confidence interval
5	Upper limit of the forecast confidence interval

[in] **alpha** is the statistical significance level. If missing, a default of 5% is assumed.
[out] **retVal** is the calculated forecast value

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. The long-run mean argument (mean) can take any value or be omitted, in which case a zero value is assumed.
5. The value of the residuals/innovations standard deviation (sigma) must be positive.
6. The season length must be greater than one.
7. The input argument for the non-seasonal MA parameter - theta - is optional and can be omitted, in which case no non-seasonal MA component is included.
8. The input argument for the seasonal MA parameter - theta2 - is optional and can be omitted, in which case no seasonal MA component is included.

Requirements

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

Examples

```
int NDK_AIRLINE_FORE(double[]                pData,
                     UIntPtr                 nSize,
                     double                  mean,
                     double                  sigma,
                     short                   dSeason,
                     double                  theta,
                     double                  theta2,
                     UIntPtr                 nStep,
                     FORECAST_RETVAL_FUNC    retType,
                     double                  alpha,
```

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

ref double retVal
)

Calculates the out-of-sample forecast statistics.

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 univariate time series data (a one dimensional array).
[in] **nSize** is the number of observations in pData.
[in] **mean** is the model mean (i.e. mu).
[in] **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] **theta** is the coefficient of first-lagged innovation (see model description).
[in] **theta2** is the coefficient of s-lagged innovation (see model description).
[in] **nStep** is the forecast time/horizon (expressed in terms of steps beyond end of the time series).
[in] **retType** is a switch to select the type of value returned

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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")]