NDK_ARMA_VALIDATE

Last Modified on 04/27/2016 12:58 pm CDT

- C/C++
- .Net

```
int __stdcall NDK_ARMA_VALIDATE(double   mean,
                                double   sigma,
                                double * phis,
                                size_t   p,
                                double * thetas,
                                size_t   q
                               )
```

Examines the model's parameters for stability constraints (e.g. stationary, etc.).

Returns

status code of the operation

Return values

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

Parameters

[in] **mean** is the ARMA model mean (i.e. mu).
[in] **sigma** is the standard deviation of the model's residuals/innovations.
[in] **phis** are the parameters of the AR(p) component model (starting with the lowest lag).
[in] **p** is the number of elements in phis (order of AR component)
[in] **thetas** are the parameters of the MA(q) component model (starting with the lowest lag).
[in] **q** is the number of elements in thetas (order of MA component)

Remarks

1. The underlying model is described **here**.
2. NDK_ARMA_VALIDATE checks the process for stability: stationarity, invertability, and causality.
3. Using the Solver add-in in Excel, you can specify the return value of NDK_ARMA_VALIDATE as a constraint to ensure a stationary ARMA model.
4. The long-run mean can take any value or be omitted, in which case a zero value is assumed.
5. The residuals/innovations standard deviation (sigma) must greater than zero.
6. For the input argument - phi:
   - The input argument is optional and can be omitted, in which case no AR component is included.
   - The order of the parameters starts with the lowest lag.
   - The order of the AR component model is solely determined by the order of the last value in

the array with a numeric value (vs. missing or error).

7. For the input argument - theta:
   - The input argument is optional and can be omitted, in which case no MA component is included.
   - The order of the parameters starts with the lowest lag.
   - The order of the MA component model is solely determined by the order of the last value in the array with a numeric value (vs. missing or error).

Requirements

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

Examples

```
int NDK_ARMA_VALIDATE(double   mean,
                      double   sigma,
                      double[] phis,
                      UIntPtr  p,
                      double[] thetas,
                      UIntPr   q
                     )
```

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

Examines the model's parameters for stability constraints (e.g. stationary, etc.).

Return Value

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

NDK_SUCCESS operation successful
Error Error Code

Parameters

[in] **mean** is the ARMA model mean (i.e. mu).
[in] **sigma** is the standard deviation of the model's residuals/innovations.
[in] **phis** are the parameters of the AR(p) component model (starting with the lowest lag).
[in] **p** is the number of elements in phis (order of AR component)

[in]**thetas** are the parameters of the MA(q) component model (starting with the lowest lag).
[in]**q** is the number of elements in thetas (order of MA component)

Remarks

1. The underlying model is described **here**.
2. NDK_ARMA_VALIDATE checks the process for stability: stationarity, invertability, and causality.
3. Using the Solver add-in in Excel, you can specify the return value of NDK_ARMA_VALIDATE as a constraint to ensure a stationary ARMA model.
4. The long-run mean can take any value or be omitted, in which case a zero value is assumed.
5. The residuals/innovations standard deviation (sigma) must greater than zero.
6. For the input argument - phi:
   - The input argument is optional and can be omitted, in which case no AR component is included.
   - The order of the parameters starts with the lowest lag.
   - The order of the AR component model is solely determined by the order of the last value in the array with a numeric value (vs. missing or error).
7. For the input argument - theta:
   - The input argument is optional and can be omitted, in which case no MA component is included.
   - The order of the parameters starts with the lowest lag.
   - The order of the MA component model is solely determined by the order of the last value in the array with a numeric value (vs. missing or error).

Exceptions

Exception Type	Condition
None	N/A

Requirements

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

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")]