NDK_ARMA_PARAM

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- C/C++
- .Net

```
int __stdcall NDK_ARMA_PARAM(double *        pData,
                             size_t          nSize,
                             double *        mean,
                             double *        sigma,
                             double *        phis,
                             size_t          p,
                             double *        thetas,
                             size_t          q,
                             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]	**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 ARMA model mean (i.e. mu).
[in,out]	**sigma**	is the standard deviation of the model's residuals/innovations.
[in,out]	**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,out]	**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)
[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. #N/A) at either end.
4. ARMA_PARAM returns an array for the values (or errors) of the model's parameters in the following order:
   - μ
   - $\phi_1, \phi_2, ..., \phi_p$
   - $\theta_1, \theta_2, ..., \theta_q$
   - σ

Requirements

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

Examples

```
int NDK_ARMA_PARAM(double[]        pData,
                   UIntPtr         nSize,
                   ref double      mean,
                   ref double      sigma,
                   double[]        phis,
                   UIntPtr         p,
                   double[]        thetas,
                   UIntPtr         q,
                   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]	**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 ARMA model mean (i.e. mu).
[in,out]	**sigma**	is the standard deviation of the model's residuals/innovations.
[in,out]	**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,out]	**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)
[in]	**retType**	is a switch to select the type of value returned: 1= Quick Guess, 2=Calibrated, 3= Std. Errors

Order	Description
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4. ARMA_PARAM returns an array for the values (or errors) of the model's parameters in the following order:
   - μ
   - $\phi_1, \phi_2, ..., \phi_p$
   - $\theta_1, \theta_2, ..., \theta_q$
   - σ

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")]