NDK_ARMA_FITTED

Last Modified on 07/08/2016 9:46 am CDT

- C/C++
- .Net

```
int __stdcall NDK_ARMA_FITTED(double *          pData,
                              size_t            nSize,
                              double            mean,
                              double            sigma,
                              double *          phis,
                              size_t            p,
                              double *          thetas,
                              size_t            q,
                              FIT_RETVAL_FUNC   retType
                             )
```

Returns an array of cells for the fitted values (i.e. mean, volatility and residuals)

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]	**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)
[in]	**retType**	is a switch to select a output type

Order	Description
1	Fitted mean (default)
2	Fitted standard deviation or volatility
3	Raw (non-standardized) residuals
4	Standardized residuals

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 can take any value or be omitted, in which case a zero value is assumed.
5. The residuals/innovations standard deviation (sigma) must be 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.
   - One or more parameters may have missing value or an error code (i.e. #NUM!, #VALUE!, etc.).
   - 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.
   - One or more values in the input argument can be missing or an error code (i.e. #NUM!, #VALUE!, etc.).
   - 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_FITTED(double[] pData,
                    UIntPtr  nSize,
                    double   mean,
                    double   sigma,
                    short    nIntegral,
                    double[] phis,
                    UIntPtr  p,
```

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

```
                    double[] thetas,
                    UIntPtr  q,
                    short    retType
                   )
```

Returns an array of cells for the fitted values (i.e. mean, volatility and residuals)

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]	**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)
[in]	**retType**	is a switch to select a output type

Order	Description
1	Fitted mean (default)
2	Fitted standard deviation or volatility
3	Raw (non-standardized) residuals
4	Standardized residuals

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 can take any value or be omitted, in which case a zero value is assumed.
5. The residuals/innovations standard deviation (sigma) must be 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.
   - One or more parameters may have missing value or an error code (i.e. #NUM!, #VALUE!, etc.).
   - 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.
    - One or more values in the input argument can be missing or an error code (i.e. #NUM!, #VALUE!, etc.).
    - 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")]