NDK_GARCH_PARAM

Last Modified on 07/12/2016 11:30 am CDT

- C/C++
- .Net

```
int __stdcall NDK_GARCH_PARAM(double * pData,
                              size_t   nSize,
                              double * mu,
                              double * Alphas,
                              size_t   p,
                              double * Betas,
                              size_t   q,
                              WORD     nInnovationType,
                              double * nu,
                              WORD     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] **mu**   is the GARCH model conditional mean (i.e. mu).

[in,out] **Alphas**   are the parameters of the ARCH(p) component model (starting with the lowest lag).

[in]   **p**   is the number of elements in Alphas array

[in,out] **Betas**   are the parameters of the GARCH(q) component model (starting with the lowest lag).

[in]   **q**   is the number of elements in Betas array

[in]   **nInnovationType** is the probability distribution function of the innovations/residuals (see **INNOVATION_TYPE**)

- INNOVATION_GAUSSIAN Gaussian Distribution (default)
- INNOVATION_TDIST Student's T-Distribution,
- INNOVATION_GED Generalized Error Distribution (GED)

[in,out] **nu**	is the shape factor (or degrees of freedom) of the innovations/residuals probability distribution function.
[in] **retType**	is a switch to select the type of value returned: 1= Quick Guess, 2=Calibrated, 3= Std. Errors (see **MODEL_RETVAL_FUNC**)
[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.

Requirements

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

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int NDK_GARCH_PARAM(double[] pData,
UIntPtr   nSize,
ref double mu,
double[]   Alphas,
UIntPtr   p,
double[]   Betas,
UIntPtr   q,
short   nInnovationType,
ref double nu,
short   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]	**mu**	is the GARCH model conditional mean (i.e. mu).
[in,out]	**Alphas**	are the parameters of the ARCH(p) component model (starting with the lowest lag).
[in]	**p**	is the number of elements in Alphas array
[in,out]	**Betas**	are the parameters of the GARCH(q) component model (starting with the lowest lag).
[in]	**q**	is the number of elements in Betas array
[in]	**nInnovationType**	is the probability distribution function of the innovations/residuals (see **INNOVATION_TYPE**) • INNOVATION_GAUSSIAN Gaussian Distribution (default) • INNOVATION_TDIST Student's T-Distribution, • INNOVATION_GED Generalized Error Distribution (GED)
[in,out]	**nu**	is the shape factor (or degrees of freedom) of the innovations/residuals probability distribution function.
[in]	**retType**	is a switch to select the type of value returned: 1= Quick Guess, 2=Calibrated, 3= Std. Errors (see **MODEL_RETVAL_FUNC**)
[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.

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")]