

NDK_EGARCH_FITTED

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- [C/C++](#)
- [.Net](#)

```
int __stdcall NDK_EGARCH_FITTED(double *      pData,
                                size_t       nSize,
                                double       mu,
                                const double * Alphas,
                                size_t       p,
                                const double * Gammas,
                                size_t       g,
                                const double * Betas,
                                size_t       q,
                                WORD         nInnovationType,
                                double       nu,
                                WORD         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] **pData** is the univariate time series data (a one dimensional array).
- [in] **nSize** is the number of observations in pData.
- [in] **mu** is the GARCH model conditional mean (i.e. μ).
- [in] **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] **Gammas** are the leverage parameters (starting with the lowest lag).
- [in] **g** is the number of elements in Gammas. Must be equal to (p-1).
- [in] **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] **nu** is the shape factor (or degrees of freedom) of the innovations/residuals probability distribution function.

[in] **retType** is a switch to select a output type (see [FIT_RETVAL_FUNC](#))

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. The number of gamma-coefficients must match the number of alpha-coefficients.
5. The number of parameters in the input argument - alpha - determines the order of the ARCH component model.
6. The number of parameters in the input argument - beta - determines the order of the GARCH component model.

Requirements

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

```
int NDK_EGARCH_FITTED(double[] pData,
                    UIntPtr nSize,
                    double mu,
                    double[] Alphas,
                    UIntPtr p,
                    double[] Gammas,
                    double[] Betas,
                    UIntPtr q,
                    short nInnovationType,
                    double nu,
                    short retType
                    )
```

Namespace: NumXLAPI

Class: SFSDK

Scope: Public

Lifetime: Static

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] **pData** is the univariate time series data (a one dimensional array).
- [in] **nSize** is the number of observations in pData.
- [in] **mu** is the GARCH model conditional mean (i.e. mu).
- [in] **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] **Gammas** are the leverage parameters (starting with the lowest lag).
- [in] **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] **nu** is the shape factor (or degrees of freedom) of the innovations/residuals probability distribution function.
- [in] **retType** is a switch to select a output type (see **FIT_RETVAL_FUNC**)

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. The number of gamma-coefficients must match the number of alpha-coefficients.
5. The number of parameters in the input argument - alpha - determines the order of the ARCH component model.
6. The number of parameters in the input argument - beta - determines the order of the GARCH component model.

Exceptions

Exception Type	Condition
None	N/A

Requirements

Namespace	NumXLAPI
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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")]