NDK_GARCHM_VALIDATE

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- C/C++
- .Net

```
int __stdcall NDK_GARCHM_VALIDATE(double       mu,
                                  double       flambda,
                                  const double * Alphas,
                                  size_t       p,
                                  const double * Betas,
                                  size_t       q,
                                  WORD         nInnovationType,
                                  double       nu
                                 )
```

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]	**mu**	is the GARCH model conditional mean (i.e. mu).
[in]	**flambda**	is the volatility coefficient for the mean. In finance, lambda is referenced as the risk premium.
[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]	**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.

Remarks

1. The underlying model is described **here**.
2. The time series is homogeneous or equally spaced.
3. GARCHM_CHECK examines the model's coefficients for:
   - Coefficients are all positive
   - \(\lambda > 0\)
4. The number of parameters in the input argument - alpha - determines the order of the ARCH component model.
5. 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_GARCHM_VALIDATE(double   mu,
                        double   lambda,
                        double[] Alphas,
                        UIntPtr  p,
                        double[] Betas,
                        size_t   q,
                        short    nInnovationType,
                        double   nu
                       )
```

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]**mu**	is the GARCH model conditional mean (i.e. mu).
[in]**flambda**	is the volatility coefficient for the mean. In finance, lambda is referenced as the risk premium.
[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] **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.

Remarks

1. The underlying model is described **here**.
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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")]