NDK_GARCH_VALIDATE

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- C/C++
- .Net

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int __stdcall NDK_GARCH_VALIDATE(double   mu,
**   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. variance stationary, positive variance, 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] **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. The number of parameters in the input argument - alpha - determines the order of the ARCH component model.
4. The number of parameters in the input argument - beta - determines the order of the GARCH component model.
5. GARCH_CHECK examines the model's coefficients for:
   - $\alpha_o > 0\,, \alpha_{i>0}\geq 0 \,, \beta_j \geq 0$
   - $\sum_{i=1}^{max(p,q)}(\alpha_i + \beta_i)$

Requirements

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

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int NDK_GARCH_VALIDATE(double   mu,
**   double[] Alpha,**
**   UIntPtr p,**
**   double[] Beta,**
**   UIntPtr q,**
**   short   nInnovationType,**
**   double   nu**
**   )**

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

Examines the model's parameters for stability constraints (e.g. variance stationary, positive variance, 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] **Alpha**   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)
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| [in] | **nu** | is the shape factor (or degrees of freedom) of the innovations/residuals probability distribution function. |

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   - $\alpha_o > 0\,, \alpha_{i>0} \geq 0 \,, \beta_j \geq 0$
   - $\sum_{i=1}^{max(p,q)}(\alpha_i + \beta_i)$

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")]