NDK_GLM_RESID

Last Modified on 03/14/2016 11:22 am CDT

- C/C++
- .Net

```
int __stdcall NDK_GLM_RESID ( double *  Y,
                              size_t    nSize,
                              double ** X,
                              size_t    nVars,
                              double *  betas,
                              size_t    nBetas,
                              double    phi,
                              WORD      Lvk,
                              WORD      retType
                            )
```

Returns the standardized residuals/errors of a given GLM.

Returns

status code of the operation

Return values

NDK_SUCCESS	Operation successful
NDK_FAILED	Operation unsuccessful. See **Macros** for full list.

Parameters

[in] **Y**	is the response or the dependent variable data array (one dimensional array)
[in] **nSize**	is the number of observations
[in] **X**	is the independent variables data matrix, such that each column represents one variable
[in] **nVars**	is the number of independent variables (or columns in X)
[in] **betas**	are the coefficients of the GLM model (a one dimensional array)
[in] **nBetas**	is the number of the coefficients in betas. Note that nBetas must be equal to nVars+1
[in] **phi**	is the GLM dispersion parameter. Phi is only meaningful for Binomial (1/batch or trial size) and for Gaussian (variance). • Binomial : phi = Reciprocal of the batch/trial size. • Gaussian : phi = variance. • Poisson : phi = 1.0

[in] **Lvk** is the link function that describes how the mean depends on the linear predictor (see **GLM_LINK_FUNC**).

1. Identity (default)
2. Log
3. Logit
4. Probit
5. Complementary log-log

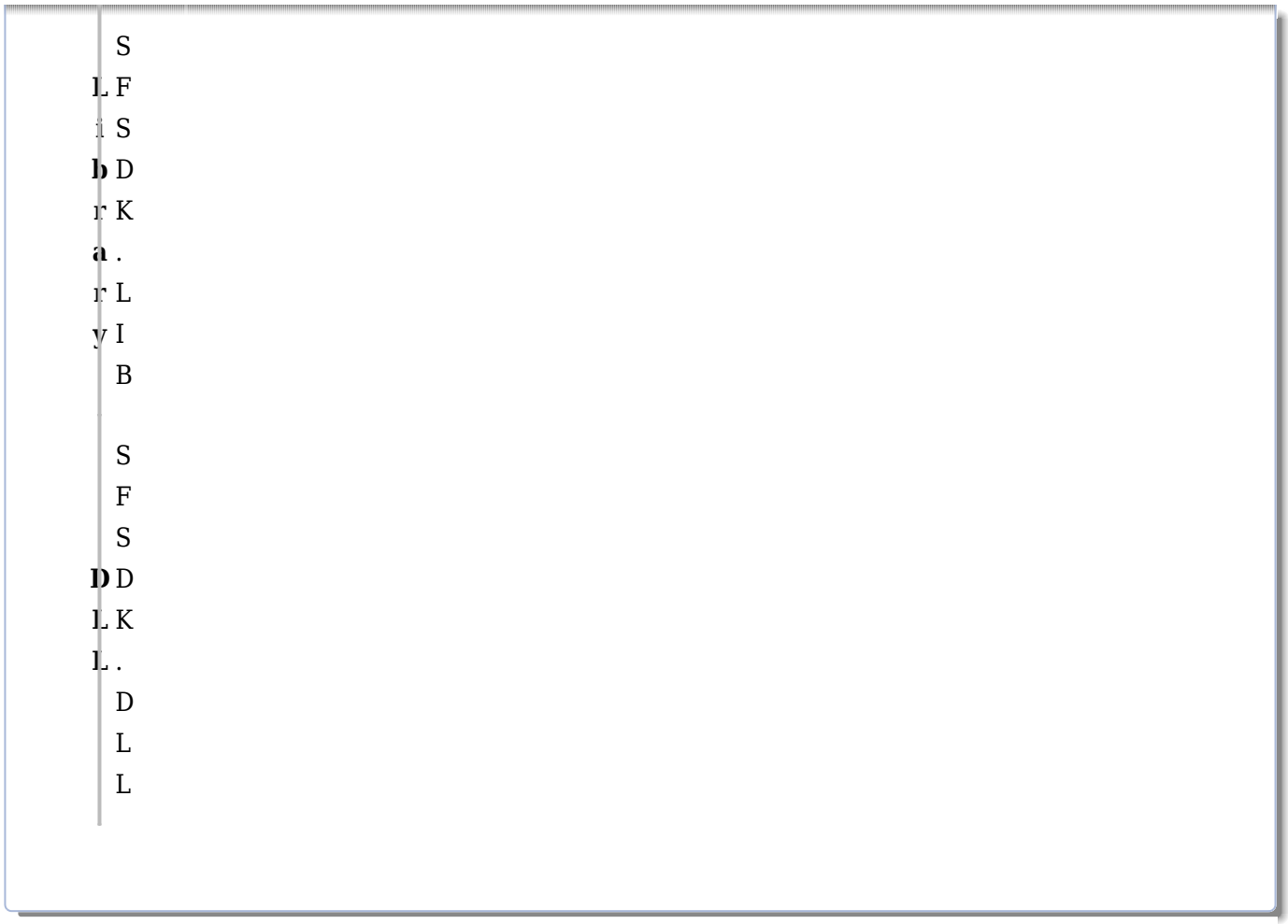
[in] **retType** is a switch to select a residuals-type:raw or standardized.
see **RESID_RETVAL_FUNC**

Remarks

1. The underlying model is described **here**.
2. The GLM residuals are defined as follow: \[\left[\epsilon\right]= \left[Y\right] - g^{-1}(X\beta) \]
3. GLM_RESID returns an array of size equal to number of rows in the input response (Y) or explanatory variables (X).
4. The number of rows in response variable (Y) must be equal to number of rows of the explanatory variables (X).
5. The betas input is optional, but if the user provide one, the number of betas must equal to the number of explanatory variables (i.e. X) plus one (intercept).
6. For GLM with Poisson distribution,
   - The values of response variable must be non-negative integers.
   - The value of the dispersion factor (Phi) value must be either missing or equal to one.
7. For GLM with Binomial distribution,
   - The values of the response variable must be non-negative fractions between zero and one, inclusive.
   - The value of the dispersion factor (Phi) must be a positive fraction (greater than zero, and less than one).
8. For GLM with Gaussian distribution, the dispersion factor (Phi) value must be positive.

Requirements

Header SFSDK.H



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")]