

NDK_PCR_STEPWISE

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

```
int __stdcall NDK_PCR_STEPWISE ( double ** X,  
                                size_t   nXSize,  
                                size_t   nXVars,  
                                LPBYTE   mask,  
                                size_t   nMaskLen,  
                                double * Y,  
                                size_t   nYSize,  
                                double   intercept,  
                                double   alpha,  
                                WORD     nMode  
                                )
```

Returns an array of cells for the i-th principal component (or residuals).

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See [Macros](#) for full list.

Parameters

- [in] **X** is the independent variables data matrix, such that each column represents one variable
- [in] **nXSize** is the number of observations (i.e. rows) in X
- [in] **nXVars** is the number of variables (i.e. columns) in X
- [in] **mask** is the boolean array to select a subset of the input variables in X. If missing (i.e. NULL), all variables in X are included.
- [in] **nMaskLen** is the number of elements in mask
- [in] **Y** is the response or the dependent variable data array (one dimensional array)
- [in] **nYSize** is the number of elements in Y
- [in] **intercept** is the constant or the intercept value to fix (e.g. zero). If missing (NaN), an intercept will not be fixed and is computed normally
- [in] **alpha** is the statistical significance of the test (i.e. alpha)

[in] **nMode** is a switch to select the variable's inclusion/exclusion approach (1=forward selection (default), 2=backward elimination , 3=bi-directional elimination):

1. Forward selection
2. Backward elimination
3. Bi-directional elimination

Remarks

1. The underlying model is described [here](#).
2. The stepwise regression includes regression models in which the choice of predictive variables is carried out by an automatic procedure. The procedure takes the form of a sequence of f-tests in selecting or eliminating explanatory variables.
3. The three main approaches are:
 - Forward Selection, which involves starting with no variables in the model, testing the addition of each variable using a chosen model comparison criterion, adding the variable (if any) that improves the model the most, and repeating this process until no further improvement is possible.
 - Backward Elimination, which involves starting with all candidate variables, testing the deletion of each variable using a chosen model comparison criterion, deleting the variable (if any) that improves the model the most by being deleted, and repeating this process until no further improvement is possible.
 - Bi-directional Elimination, a combination of the above tests, involves testing at each step for variables to be included or excluded.
4. The initial values in the mask array define the variables set that MLR_STEPWISE works with. In other words, variables which are not selected will not be considered during the regression.
5. The sample data may include missing values.
6. Each column in the input matrix corresponds to a separate variable.
7. Each row in the input matrix corresponds to an observation.
8. Observations (i.e. row) with missing values in X or Y are removed.
9. The number of rows of the response variable (Y) must be equal to the number of rows of the explanatory variables (X).
10. The MLR_STEPWISE function is available starting with version 1.60 APACHE.

Requirements

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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
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See Also

[template("related")]