# Help for CNOP package

## The **cnop** command

### Syntax

**CNOP depvar indepvars [if] [in] [, zp(varlist) zn(varlist) infcat(integer 0) correlated cluster(varname) robust initial(string)]**

**MIOP depvar indepvars [if] [in] [, z(varlist) infcat(integer 0) ~~correlated~~ cluster(varname) robust initial(string)]**

**NOP depvar indepvars [if] [in] [, zp(varlist) zn(varlist) infcat(integer 0) correlated cluster(varname) robust initial(string)]**

### Description

**CNOP** fits a cross-nested ordered probit model with possibly different sets of covariates for each stage and possibly correlated errors by maximum likelihood.  
**MIOP** fits middle-inflated ordered probit model.

**NOP** fits nested ordered probit model.

### Options

**zp(varlist)** indicates list of covariates for positive response; by default, it equals **indepvars**, the list of covariates for initial stage.

**zn(varlist)** indicates list of covariates for negative response; by default, it equals **indepvars**, the list of covariates for initial stage.

**infcat(integer)** indicated the value of response variable that should be modeled as inflated; by default, it is zero.

**correlated** shows that errors in the first and second stages may be correlated, forcing estimation of CNOPC model.

**robust** indicates that variance-covariance estimator must be robust (based on “sandwich”) estimate.

**cluster(varname)** indicates clustering variable for robust variance estimator

**initial(string)** indicates whitespace-delimited list of initial parameter values for estimation, in the following order: beta alpha gammap mup gamman mun [rhon rhop]

### Examples

### Stored results

## CNOP postestimation commands

### The **predict** command

The **predict** command after **cnop**, **miop** or **nop** estimation commands produces predicted probabilities of response values.

**predict name [if] [in] [, zeroes regime output(string) at(string)]**

**name** is the name of predicted variable, if it is single, or prefix for names, if there are several predicted variables

**zeroes** indicates that different types of zeroes (i.e. intrinsic zeroes, or “positive zeroes”, or “negative zeroes”) must be predicted instead of different response values.

**regime** indicates that different groups of response (negative, positive or zero) must be predicted instead of different response values. This option is ignored if **zeroes** option is on.

**output(string)** specifies type of aggregating predicted probabilities of different response. Possible values are **mode** and **mean**, for predicting average or most probable outcome, and **cum** for predicting cumulative response probabilities (i.e. p(y <=-2), p(y<=-1), p(y<=0) etc.). If not specified, raw response probabilities are predicted (p(y=-2), p(y=-1), p(y=0) etc.).

### The **cnopmargins** command

**cnopmargins [, at(string asis) nominal(varlist) zeroes regime]**

This command prints marginal effects for the last estimated CNOP, MIOP or NOP model, calculated at the specified point, along with confidence intervals.

**at(string)** specifies at which point predictions must be calculated. If **at** is specified, (as a list of *varname=value* expressions, separated by comma), prediction is calculated at this point and posted on the screen without saving to the dataset. If some covariate names are not specified, the mean is taken instead.

**nominal** is a space-separated list of covariates which should be considered as nominal; marginal effect is then calculated as difference between values at 0 and at 1.

**zeroes** and **regime** indicate that marginal effects should be calculated for different zeroes or for groups of response variable, as in **predict** command.

### The **cnopprobabilities** command

**cnopprobabilities [, at(string asis) zeroes regime]**

This command prints predicted probabilities for the last estimated CNOP, MIOP or NOP model, calculated at the specified point, along with confidence intervals.

### The **cnopcontrasts** command

**cnopcontrasts** [, at(**string asis) to(string asis) zeroes regime]**

This command prints differences in predicted probabilities for the last estimated CNOP, MIOP or NOP model, calculated between the specified points, along with confidence intervals.