

Note: all programs can work under Stata version 8.0 control, performance under the older version is not guaranteed!

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===== Syntax for the estimators =====

1. `simpself/simplsel2 var1 var2 var3, sel(varlist) exog(varlist) very(varlist)`

Observed data are n observations of p, d, y, z, v, x;

The model is

$$p = (yB + e)d, \quad E(ez)=0, \quad d = I(0 < v + M^* < A^*), \quad v = xA + \eta$$

p is the observed outcome, which is zero when d=0.

d is the discrete selection indicator

v is the very exogenous regressor.

y is the varlist in sel()

z is the varlist in exog(), instruments for p model

x is varlist in very(), regressors in d and v models.

e = outcome error,

M* and A* are latent variables (A* can be infinity)

M*, e, and X can be related in unknown ways, but they are all independent of eta.

eta = v model error

var1 is the LHS var.in the outcome model.

var2 is the selection dummy.

var3 is the very exogenous regressor.

varlist in sel() is the FULL set of RHS var's in the outcome model.

varlist in exog() is the FULL IV list for the outcome model, i.e. both the included and the excluded instruments.

varlist in Very() is the RHS var for the very exog. var model.

2. `simpbin0 var1 var2 var3, bin(varlist) exog(varlist)`

The model is $D=I(v+x'B+e>0)$, $E(ez)=0$,

Assume the conditional density of v is known.

var1 is choice dummy.

var2 is the very exogenous regressor.

var3 is the the density of the very exogenous var(v).

varlist in bin() is the RHS varlist of the binary choice model(x), expect for the very exog. var.

varlist in exog() is the FULL IV list for the outcome model(z), i.e. both the included and the excluded instruments.

3. `simpbin1/simpbin2 var1 var2, bin(varlist) exog(varlist) very(varlist)`

The model is $D=I(v+x'B+e>0)$, $E(ez)=0$, $v=s'A+\eta$,

eta is homoskedastic and normal, eta is independent of e, s, x.

s is a union of regressors x and instruments z
var1 is choice dummy.
var2 is the very exogenous regressor.
var3 is the density of the very exogenous var(v).
varlist in bin() is the RHS varlist of the binary choice model(x), expect for the very exog. var.
varlist in exog() is the FULL IV list for the outcome model(z), i.e. both the included and the excluded instruments.
varlist in very() is the RHS varlist for the very exog. var model.