Package Name: Heckman

Author: Quantitative Micro Software

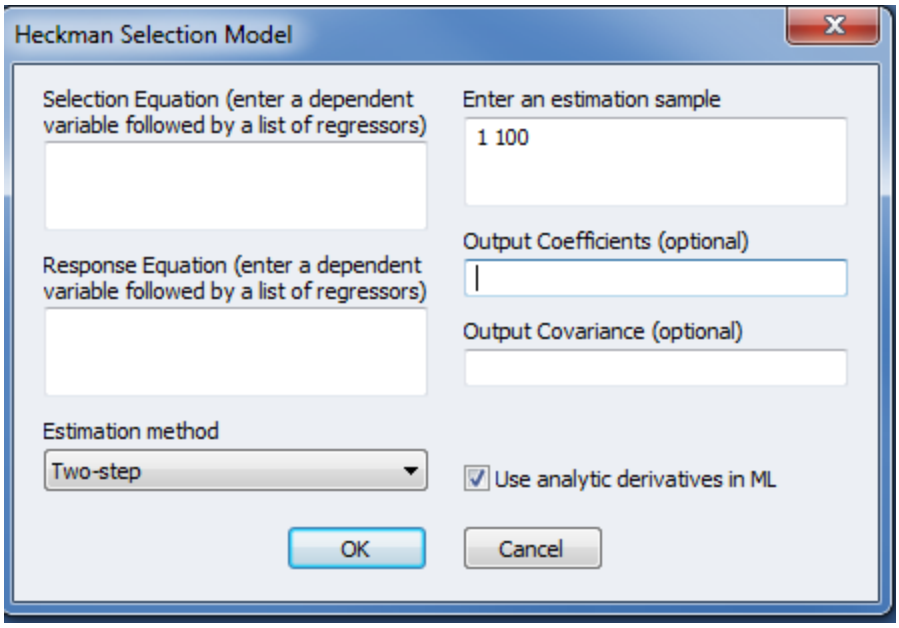
Date: 2010/03/31

Add-in Type: Global
Default Proc Name: heckman
Default Menu Text: Heckman Selection Model
Interface: Dialog and command line.

Description: This add-in performs the Heckman (1976) selection model, using either the two-step estimation technique, or a maximum likelihood procedure. Estimation output for both the selection and the response equations is given, along with some summary statistics.

Dialog:

Upon running the add-in from the menus, a dialog will appear asking the user to specify the Heckman selection model:



In the first box you should specify the dependent variable for the selection equation, followed by a (space delimited) list of regressors. In the second box you should do the same for the Response Equation. The "Estimation method" combo lets you choose the type of estimation method, from either a Two-step procedure or a Maximum Likelihood procedure. The "Use analytic derivatives in ML" check-box lets you choose whether to use analytic derivatives or numeric derivatives. Numeric derivatives can be faster, but may not converge as well.

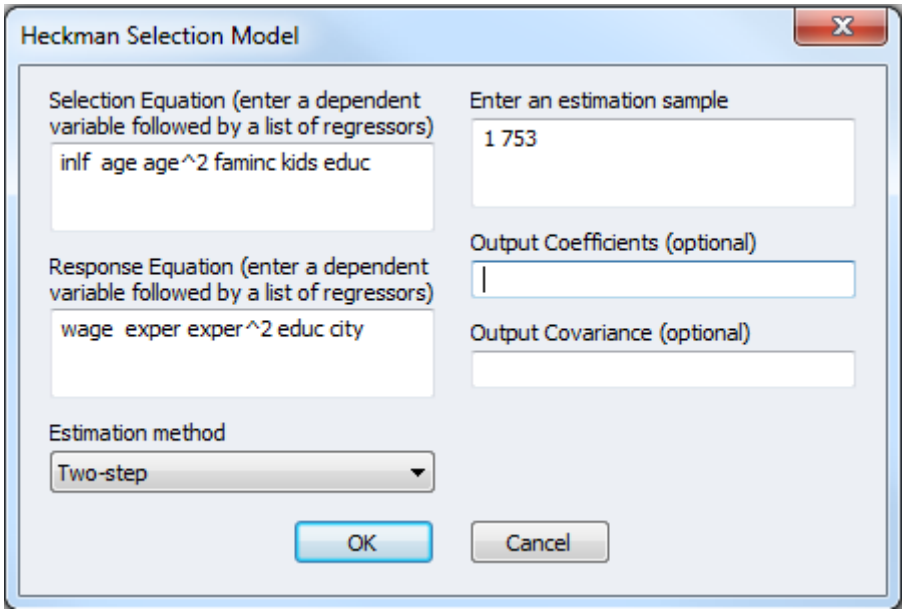
The first box on the right lets you set the sample for the estimation. The final two boxes let you specify the name of a matrix to store the estimated coefficients and the estimated covariance matrix.

Once you hit "OK", a display of the estimation results will appear.

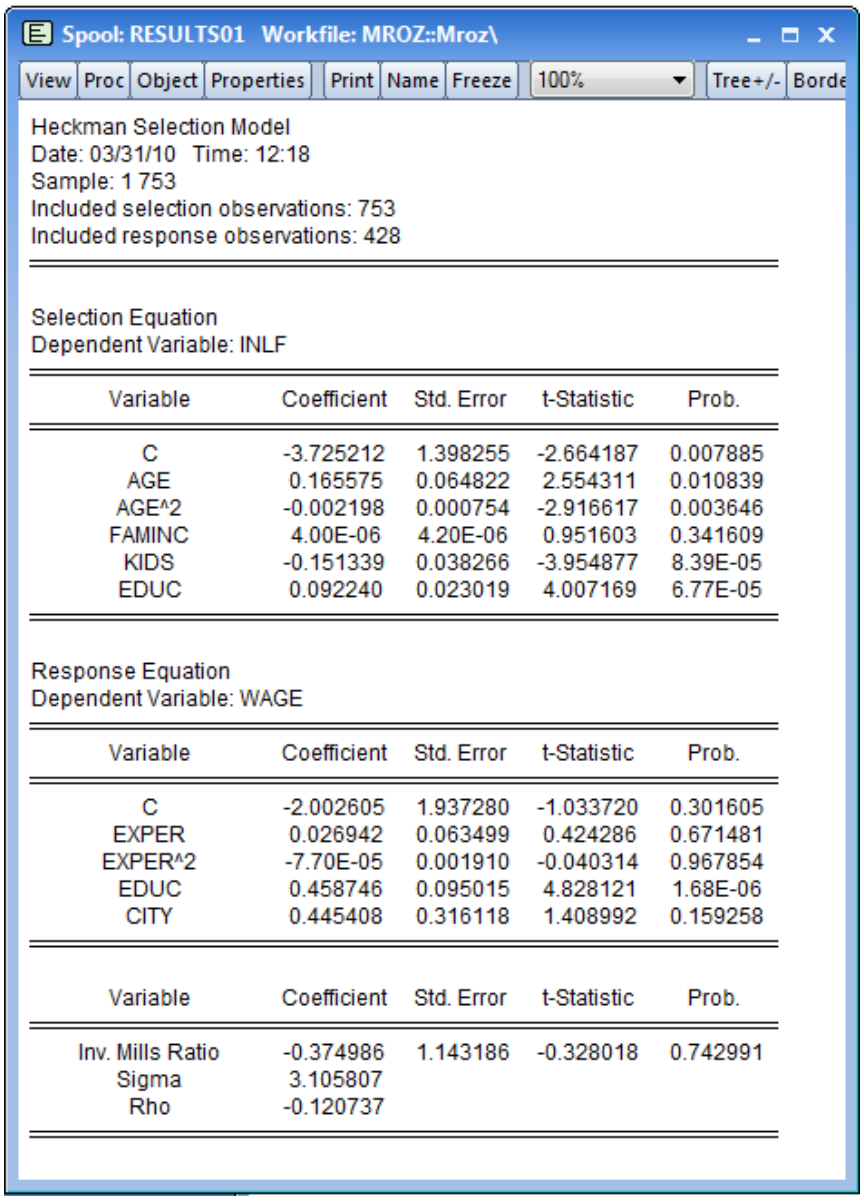
As an example we will use the Mroz87 data from Wooldridge (2003) page 590. To put this data into EViews, run the following commands:

```
wfopen http://fmwww.bc.edu/ec-p/data/wooldridge/MROZ.dta
series kids = kidsge6 + kidslt6
```

Then, specify the Heckman model as follows:



The results will look like this:



Heckman Selection Model
Date: 03/31/10 Time: 12:18
Sample: 1 753
Included selection observations: 753
Included response observations: 428

Selection Equation
Dependent Variable: INLF

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.725212	1.398255	-2.664187	0.007885
AGE	0.165575	0.064822	2.554311	0.010839
AGE^2	-0.002198	0.000754	-2.916617	0.003646
FAMINC	4.00E-06	4.20E-06	0.951603	0.341609
KIDS	-0.151339	0.038266	-3.954877	8.39E-05
EDUC	0.092240	0.023019	4.007169	6.77E-05

Response Equation
Dependent Variable: WAGE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.002605	1.937280	-1.033720	0.301605
EXPER	0.026942	0.063499	0.424286	0.671481
EXPER^2	-7.70E-05	0.001910	-0.040314	0.967854
EDUC	0.458746	0.095015	4.828121	1.68E-06
CITY	0.445408	0.316118	1.408992	0.159258

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Inv. Mills Ratio	-0.374986	1.143186	-0.328018	0.742991
Sigma	3.105807			
Rho	-0.120737			

Command line:

heckman(*options*) *selec_spec* @ *response_spec*

Options:

coefmat=*name*	save the coefficient matrix into a matrix called *name*
covarnam=*name*	save the covariance matrix into a matrix called *name*
ml	use maximum likelihood estimation
d	use analytic derivatives